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Future of Wage Freeze Policy

LAST Monday the special economic committee of the T.U.C. discussed the future of the wage freeze policy with Sir Stafford Cripps. Once more the Chancellor of the Exchequer is understood to have made it clear that there could be no major change in the policy of the Government during the past few years and that increased industrial production was the only justification for higher wages. Meanwhile, much concern is felt in trade union circles at the prospect of an increase in the cost of living, and at the present time nearly two-thirds of the T.U.C. membership refuses to abide by the policy of wage restraint. At the recent monthly meeting of the General Council of the T.U.C. it was decided to lodge an objection to the scheme submitted by the British Transport Commission for a revision of passenger fares in the London area. Another matter which is causing the General Council concern is the proposal to increase railway freight charges. Mr. J. B. Figgins, General Secretary, N.U.R., indicated over the weekend that the N.U.R. would continue to press its claim for a £5 a week minimum wage for all railwaymen, issuing at the same time a warning that the men might refuse to go on working on their rest days. Mr. Figgins criticised the way the Railway Executive had handled the wage claims and thought that there should be a Court of Inquiry similar to that of 1947. This was of such a character that its recommendations were not binding on the unions.

Mr. John Quirey

THE death on March 21 of Mr. John Quirey, C.B.E., formerly a Vice-President of the London Midland & Scottish Railway, and afterwards a permanent Member of the Railway Rates Tribunal, severs a link with the earliest days of the latter body. Before his appointment as a Member of the Tribunal in 1931, Mr. Quirey had had perhaps a longer experience of its work than almost any other railway officer, by reason of his constant attendance as a witness and his work in the preparation of cases. During his own service on the Tribunal he was able to use his long experience to good effect, and became noted for his skill, when questioning witnesses, in quickly singling out important points. The Railway Rates Tribunal (which, under the Transport Act, 1947, has been renamed Transport Tribunal) was established under the Railways Act of 1921, at which period Mr. Quirey was Accountant of the Midland Railway. On the formation of the L.M.S.R. he became Joint Accountant, and in the next year became Accountant-General. He served as a Vice-President from 1927 to 1931, when he was appointed a permanent Member of the Railway Rates Tribunal, from which office he did not retire until 1943.

Irish Transport Bill

THERE is now no possibility of the Irish Transport Bill becoming law by April 1 as was hoped. The second stage of the Bill in the Senate was passed on March 23, but the date fixed for the committee stage is April 19, and, while there is a possibility that the nationalisation of C.I.E. may be made retrospective from the original date, there has as yet been no official statement on this point. The main purpose of the Bill, the text of which was summarised in our issue of October 21, 1949, provides for bringing Coras Iompair Eireann and the Grand Canal Company under public ownership. Last year, as was stated in our issue of March 10, there was a loss of £1,205,746 on the working of C.I.E., which compares with £1,424,328 for the previous twelve months. Mr. D. Morrissey, Minister for Industry & Commerce, remarked in the Senate last week that he believed the railway service could be maintained on an economic basis if they had the right men and could count on the loyalty of the 22,000 employees who were "enjoying a security and conditions unequalled in any other employment."

Proposed South African Rates Increase

WHEN Mr. P. Sauer, South African Minister of Transport, presented the railway budget on March 23 he announced that, although the railways had carried record numbers of passengers and freight tonnages in 1948-49, working expenses were still rising, and he expected a deficit in the coming year of £8,700,000 on a total expenditure of £100,800,000. The 1948-49 results showed several new records. Train and engine-mileage was 104,482,681 or 3,941,938 miles more than the previous record. Goods carried totalled 55,322,965 tons, an increase of 2,708,509 on the year before, passenger journeys were 254,454,741, and revenue at £13,456,425 represented an increase of 80,322. The railways deficit was £6,094,190. The Minister proposed a general increase of 10 per cent. in almost all rates, and more for some classes, chiefly manganese, coal, and chrome. The development of secondary industries, goldmines and base mineral exports had added to the burdens of the railways, which had had to contend with severe flood damage which dislocated traffic. Administration was being radically reorganised in the interests of efficiency and projected capital works were being cut down where possible.

Railway Catering

IN recent months there has been a notable improvement in the catering provided in many trains and also in station refreshment rooms. A greater variety of food has been available at main meals on long-distance trains, especially those serving important industrial centres. The improvements have been welcomed, especially by regular travellers who make up a considerable proportion of the customers. It is almost inevitable that the progress which has been achieved has been somewhat costly to the Hotels Executive, but the provision of adequate and attractive menus is a valuable service and one likely to make its contribution to the overall revenues of the British Transport Commission by the attraction of additional passengers. In very many parts of the world the provision of meals in trains is regarded as part of the normal service, and no attempt is made to earn a profit on the catering side, although naturally there is every endeavour to minimise losses. We have previously expressed the view that catering in dining, buffet cars, and station refreshment rooms, should be conducted as a department of the Railway Executive rather than performed as a function of the separate Hotels Executive. This is in no way a criticism of the services provided by the Hotels Executive, but a suggestion for a more logical distribution of functions.

Overseas Railway Traffics

A FURTHER deficit in net revenue was shown by the Canadian National Railways during February, when operating revenues amounting to £12,255,000 were exceeded by operating expenses at £12,707,000. The net deficit, which was £452,000, compared with a £855,000 deficit in the previous month, but was a £47,000 improvement over the result for the equivalent period of 1949. On the aggregate C.N.R. operating expenses have fallen by £489,000 to £25,242,000, though there has been an accompanying decline by £801,000 to £23,935,000 in operating revenues. The deficit in net revenue at the end of eight weeks was £312,000 greater than during 1949 and amounted to £1,307,000. During the current year traffics of the Antofagasta (Chili) & Bolivia have not been maintained at the 1949 level and receipts for the two weeks ended March 19 were down by £31,680 at £119,850. At the end of eleven weeks Antofagasta traffics were £84,060 lower at £659,914.

Mr. Foxlee's Tour of East Africa

MR. R. W. FOXLEE, Engineer-in-Chief to the Crown Agents for the Colonies, has recently returned from an extended visit to East Africa. In our October 21, 1949, issue, we gave some details of his projected tour on which he was accompanied by a personal assistant, Mr. P. C. Lucas. Mr. Foxlee has been to Kenya, Uganda, Tanganyika, Zanzibar, Nyasaland and Northern Rhodesia, and he returns to this country by sea from Capetown. The tour occupied some six months, during which time very considerable distances were covered by rail, road, air and water transport. Mr. Foxlee made personal contact with many Government officials at headquarters and outstations in each territory and discussed engineering matters and questions concerning all the varied activities of the Crown Agent's Office. He has devoted particular attention to the railways, to which the professional staff of the Crown Agents act as consultants. There is no doubt that the visit has been of marked value both to the Crown Agents and to the Colonial Administrations.

Nairobi Becomes a City

NAIROBI has been presented by the Duke of Gloucester with a Royal Charter raising it to the dignity of a city. When the Uganda Railway was being pushed inland to Lake Victoria from the Indian Ocean in the nineties of last century a site was chosen for the headquarters on a bleak plain 5,500 ft. above sea level. Here, the town of Nairobi grew up, to become in 1905 the seat of Government for Kenya. In an article on the development of the Kenya & Uganda Railway, the first part of which appears elsewhere in this issue, the origin of the town and the growth of the railway to its present size and importance are traced. As the centre of the recently-formed East African Railways & Harbours and the capital of a colony rich in potentialities, Nairobi, which still exhibits the great contrasts which typify a town in transition, can look forward to another half-century of even greater progress. The main line is being continually improved to keep pace, not only with the spread of Nairobi, but also with the expansion of traffic throughout the system, and one of the major developments is the realignment of the track from Nairobi northwards.

Louisville and Nashville Centenary

HERE in Great Britain we have become accustomed to celebrating centenaries of our railways, but it comes somewhat as a surprise to read that the Lexington & Ohio Railroad was incorporated in January, 1830. Its first 29-mile section from Lexington to Frankfort in Kentucky was opened for working—with horse-drawn vehicles running over iron strap rails laid on longitudinal limestone sills—in 1834. Today, this section is part of the Louisville & Nashville Railroad, which celebrated the centenary of its charter on March 5, 1950. Actually, the whole of the line from Louisville to Nashville, 190 miles in length, was opened for traffic in 1859, and was one of the longest lines of its day. Familiarly known as Old Reliable, the L. & N. RR. now owns 4,567 and works some 4,760 route-miles of line, and serves no fewer than 13 States. The system stretches from Cincinnati in the north to New Orleans in the south, and from St. Louis and Memphis in the west to McRoberts in the east and Atlanta in the south-east.

The Crewe Pupils and Premiums Annual Dinner

ONE of the casualties of the recent war was the annual dinner of Past and Present Crewe Pupils and Premiums, which up to 1939 had been held annually for nearly half a century. This gathering, which had become famous among engineers, and which had behind it the traditions of so famous and old-established a railway works, was widely representative of the highest officers as well as the rank and file of the railway engineering profession. Its members and guests always included distinguished personalities from the fields of railway, State, and commercial enterprise. The forty-ninth annual Crewe dinner was held on May 5, 1939. At that time the directors of the London, Midland & Scottish Railway had recently decided not to take further "Premiums," although they continued to encourage engineering apprentices, who had the same training as had the old premium apprentices. There can be no doubt that a revival of the Crewe dinners would be popular with many engineers and others, and the present year might well provide a favourable opportunity for holding the 50th gathering. The first regular step would be for a few public-spirited *ex*-Crewe men to form a small committee for the purpose of re-establishing a worth-while custom. There can be no doubt that they would be assured of support.

Timekeeping with 1914 Locomotives

THE fastest services on the General Roca Railway are those linking Buenos Aires with the seaside resort of Mar del Plata; this is a distance of 240 miles. Two summers ago, there came into operation on this section a non-stop service with diesel power, and, because this experiment was a success, last summer a programme was arranged for a daily non-stop round trip, taking 5 hr. each way on weekdays and 4½ hr. at the weekend. There was some delay in the arrival of spare parts for the diesel, however, which meant that recourse had to be made to steam haulage. For this duty the C.M.E., Mr. D. S. Purdom, selected the Class "12D" 4-6-0 engines of which 20 were built by Beyer, Peacock & Co. Ltd. in 1914. These engines weigh only 67½ tons in working order. Since taking up this duty the locomotives have given a consistently fine performance and early arrivals up to 8 min. have been recorded as well as remarkable recoveries of time from out-of-course checks and stops at crossing points. Because

oil burners were available, there was no fuel problem, but to avoid water stops a 36-ton tank wagon had to be used, with the result that the load behind the tender at starting was increased to 429 tons, while with passengers and luggage the load was often more than 500 tons gross.

Railway Charges

THE delay by the Minister of Transport in announcing his decision as to the recommendation by the Permanent Members of the Transport Tribunal, acting as the Charges Consultative Committee, that the application by the British Transport Commission for an increase of 16⅔ per cent. in railway freight charges should be granted, is an indication of the doubts which must be felt as to the wisdom of imposing an additional burden on British industry at the present time. From the railway point of view, there can be no doubt of the justification for the higher charges. They have been placed in an impossible position by reason of the fact that in general their costs show a rise of 120 per cent. over pre-war, whereas their charges are only 55 per cent. above the 1939 level. Whatever economies they might make it is unlikely that they could offset so grave a disadvantage.

On the other hand, the granting of the additional charges might well prove to be a mixed blessing. At the best, the additional revenue derived from them would go only part of the way towards offsetting the deficit on railway working. Because transport charges enter into many of the materials and stores which the railways themselves purchase, they would find a further element of increase in their costs from this factor. Moreover, it was recognised by railway spokesmen during the inquiry that the imposition of the higher charges might be expected to result in an actual loss of traffic estimated at £10 million. The total increment to the railways as a result of the full increase of 16⅔ per cent. was estimated at not more than £28 million in a full year. In respect of 1949 the deficit is expected to be rather more than £20 million, and for the current year about £30 million on the basis of the present charges. By the end of 1952 that deficit may have risen to as much as £100 million.

There is one way in which the Government might extract itself from the dilemma in which it is placed. The present position of nationalised transport in this country is very similar to the experimental stage in the development of a new engineering product such as the turbo-propelled motorcar, of which a good deal is heard at present. It is recognised by all informed parties that some years must elapse before the economies and greater efficiency of operation which have been held out as a large part of the justification for nationalising transport can be achieved as a result of standardisation, integration, and so forth. Would it not be reasonable to treat the deficits for, say, the first five years of State ownership in somewhat the same way as development expenditure on a new product?

If the deficits over this period, for the sake of simplicity, were £100 million, they could be funded, and if an issue of Transport Stock with similar terms and life to that already in being were made, the cost would be relatively very small, both in regard to interest and redemption. The Commission's stocks carry 3 per cent. interest and provision is made for redemption over 90 years.

Legislation would be required to give effect to any such plan. It would have considerable advantages. In the first place it would avoid the imposition of additional transport charges on industry at a time when the effects on the national economy might be grave. It would help to retain traffic which would be lost, probably for all time, as a result of increased charges, and it will be appreciated that the capitalisation of a loss of net revenue of some few millions might well amount to as much as the funded deficit. It would enable the British Transport Commission and its various Executives to press forward with plans for co-ordination and integration without the grave psychological disadvantage of operating under the shadow of a heavy deficit. It would also avoid the serious disadvantages which are associated with a direct subsidy for transport, such as is sometimes suggested.

Railway Efficiency, Economies, and Costs

DURING a visit this week to the Darlington and Manchester areas, Sir Cyril Hurcomb, Chairman of the British Transport Commission, took occasion to deal with a number of important points in the course of two public addresses. The first of these was at a luncheon at Tees-Side Chamber of Commerce at Darlington last Tuesday. On that occasion, he pronounced in favour of an increase in railway charges by pointing out that only if a just and reasonable rate level could be established, which was related to the enormous increase in the costs of transport, could a proper judgment be made of the success with which services were conducted, if financial results were regarded as a test. He gave no indication that he disagreed with the use of financial results as a test of success, and he went into some detail in refuting suggestions that the railways had neither increased their efficiency nor realised economies. He pointed out that the average wagon-load for all three principal classes of traffic had increased—by 29 per cent. for merchandise, 7 per cent. for minerals and 5 per cent. for coal and coke. For all classes the average improvement was 7 per cent. The average train-load in tons had risen by 25 per cent. Estimated net ton miles showed an increase in 1948 as compared with 1938 of nearly 5,000,000,000, an increase of 29 per cent. net ton miles per engine hour had risen from 461 in 1938 to 542 in 1948, an increase of 18 per cent. and for 1949 the corresponding figure was 559, which was an improvement of 21 per cent. over pre-war. On the other hand the rate of movement, as shown by wagon miles and train miles per engine hour, although it had improved in 1948 as compared with the previous year was still below pre-war.

On the ever-green subject of wagon size, Sir Cyril Hurcomb said he had always been an advocate of large-capacity wagons and that twenty years ago he had been a member of the Duckham Committee, which had hoped that it would be possible to standardise the twenty-ton wagon. Although it had been necessary to be content with moving first to twelve tons and then towards the sixteen-ton wagon, which was the basis of most current renewals, the advantages of introducing high-capacity wagons for special industries and for use between special points, where that could be done economically, were not being overlooked. Any appreciable increase in wagon size, would necessitate heavy capital expenditure in altering the loading and discharging apparatus at collieries, works and docks, which had been designed originally to handle relatively small wagons.

Last year the total expenditure of British Railways including provision for depreciation and renewal, but excluding sums spent on abnormal maintenance, was £312,000,000, or only £1,000,000 more than in 1948, notwithstanding many increases in expenses. Sir Cyril Hurcomb detailed a number of economies which had been made. The reorganisation of the Scottish Region would save £1,000,000 a year; compensation for damage and loss of goods had been reduced by over £1,000,000 in 1948; marshalling yards closed by merging would save £250,000 a year; the closure of stations and branch lines would save another £200,000 a year. By mechanisation and revised methods of working the cost of maintaining and renewing railway track, bridges, buildings and so forth, eventually would be reduced by some £3,000,000 a year. These and other economies, however, have been absorbed by growths of expenditure or have gone to reduce expenses met out of reserves for arrears of maintenance and, therefore, did not directly relieve the year's working results.

In many directions, costs have risen against the Commission. New concessions to staff arising last year for the first time, would cost the railways in a full year £1¼ million. Concessions to the staff of London Transport and other Executives represent an additional continuing annual charge of almost as much, making a total of £2½ million.

On fares and charges, the Chairman of the British Transport Commission declared that it did not represent the policy of the Commission to increase road fares to existing railway levels. The existing discrepancies between road and rail fares in certain cases were excessive, and in the recent proposals for dealing with fares in the London Transport

area, where there were many special problems, approval was sought for a scheme which would reduce fares calculated on the standard main line basis.

Sir Cyril Hurcomb in no way subscribed to the view that the railways have to be carried on the backs of other forms of transport. He holds the more practical opinion that the objective of integration of transport is to ensure that the railways are permitted to carry the traffic for which they are best fitted. For those traffics they should be well patronised, so as to secure the most economical loading at reasonable charges. "We hear a lot about the law of diminishing returns and the need to reduce rail fares," said Sir Cyril Hurcomb, "but there is equally a law of increasing returns. The railways will only perform their full and rightful function in the national economy when the services they offer can be correctly integrated with other forms of transport."

The progress which is being made towards integration was the subject of an address which Sir Cyril Hurcomb made to the Manchester Statistical Society on Wednesday last. In some ways, it was a natural development of his speech at Darlington, and necessarily to some extent it covered similar ground. The process of acquisition of road haulage undertakings is now nearing completion, for only about 200 firms subject to compulsory acquisition remain to be transferred in the next two months. About 2,600 road haulage undertakings have been taken over by one process or another at a purchase price of about £55,000,000.

From an organisational point of view, the Chairman suggested that a great deal would probably be learned in the future as to the degree to which different functions could best be delegated or decentralised or given central direction. He emphasised that there was no pre-ordained pattern. The Commission maintained a close oversight over the execution of the powers delegated to its six Executives. He argued that this was necessary if the policy followed was to be coherent and continuous and a regular check kept of the efficient working of the various parts of the undertaking.

He enlarged on the subject of charges policy and suggested that trade and travel as a whole should meet the cost of the unified provision of essential public transport services, without necessarily making identical contributions to overhead capital charges. Some businesses in the undertaking might well be more profitable then others at certain times, though not necessarily at all times, and it could not be assumed that in the future, any more than in the past, the balance of earnings between road and rail would always lie in the same scale. Provided their charges were brought up to date, he was in no sense defeatist on the score of the railways making a sufficient contribution towards the national transport system to ensure its being able to pay its way.

A Psychological Problem

THERE can be no doubt that the morale of railway officers and men alike is subtly affected by a prolonged period of uneconomic working of the undertaking by which they are employed. That experience is all too frequent among major railway systems at the present time. Although the losses sustained by railways in many parts of the world are widely known, the consequential effects are not so broadly appreciated. The railways of Great Britain have many companions in the financial distress which now afflicts them, and British and other railway officers will find much with which they are in agreement in the recent statement made by Mr. Donald Gordon, Chairman & President of the Canadian National Railway Company, before the Royal Commission on Transportation, to which reference was made in our last week's issue. Many of Mr. Gordon's remarks have a world-wide application.

As a State railway is public property, the public is entitled to receive a report of its annual operations in a form which is comprehensible to all, for only in this way can the public form an opinion of the soundness of the railway's management and the value of the property. On the other hand, in a great many cases the intricate nature of the financial structure and the complexities of the operating disabilities, make the preparation of such a report impossible. The average uninformed citizen, and this term must embrace many of the railway's own employees, is unable to analyse or understand the picture. The result is that the magnitude of the deficit overshadows all other considerations.

It is very easy for the view to gain ground that a particular railway is one that cannot be operated at a profit. Informed opinion, understanding the circumstances, may make due allowances, but may still be uneasy when the deficits are large. Uninformed opinion, which must always represent the majority, will make no allowance, and will lay the blame on management.

It is inevitable that these factors should be injurious to the morale of those who are responsible for the railways administration and operation. That the personnel is able to withstand these debilitating influences and maintain a high morale is a tribute to their intelligence and their powers of perseverance, but it cannot be denied that the effects are being felt.

Mr. Gordon, who was arguing in favour of an adjustment in the capital structure of the Canadian National Railways, rightly emphasised that the responsibilities of railway work are immense and exacting; to be done properly the job requires every man's full attention, his full thought and his full effort. Continuance of deficits beyond the management's ability measurably to reduce must result in destroyed incentive, for it is the nature of man to desire to work with and for a successful enterprise.

Colonial Railway Standards Conference

THE Colonial Railway Standards Conference which has been held during this week at the Colonial Office, and of which some preliminary details were given in our March 17 issue, has been attended by the Chief Mechanical Engineers of the African colonial railways, and officials from the Colonial Office and the Crown Agents for the Colonies. Representatives of the British locomotive- and wagon-building industries have been present to give technical guidance, and the Dominion of Ceylon and the Federation of Malaya have had observers.

The Conference has not been discussing railway gauges or civil engineering matters. The former will be debated at the African transport conference in Johannesburg in October. The basis of the Conference was the invitation extended by the Secretary of State for the Colonies to representatives of the various African railway administrations to meet and consider the possibility of standardisation of railway and mechanical equipment and rolling stock and how best to reduce the number of types. He informed Governors that from the supply point of view it would have greatly assisted manufacturers if large numbers of vehicles could have been run off instead of their having to disorganise their work for frequent re-tooling to meet differences of design. Although conceding that supply is much better, the Secretary of State pointed out the many advantages to be gained from some measure of standardisation and said that in one recent emergency the situation was greatly eased by the switch of locomotives from one side of Africa to the other. Standardisation of component parts is felt to be the first requisite.

The Conference was opened by Mr. W. L. Gorell Barnes, an Under-Secretary of State in the Colonial Office, as Chairman, with Mr. A. J. F. Bunning, Adviser on Inland Transport to the Colonial Secretary, as Deputy Chairman.

Two sessions have been devoted to the discussion of wagons, one to coaches and railcars, and two to locomotives. As the problem is assuming greater urgency in Africa in view of the proposed connections between hitherto isolated systems, the members, except for the two observers, as stated, all represent the African colonies, and include: Messrs. D. C. Woodward, General Manager, and F. H. J. Jaeckel, Senior Locomotive Superintendent, Nigerian Railway; G. Gibson, Chief Mechanical Engineer, East African Railways & Harbours; P. S. Palmer, Messrs. Freeman, Fox & Partners, Consulting Engineers to the Rhodesia Railways; H. A. Johnson, Chief Mechanical

Engineer, Gold Coast Railway; A. B. Henderson, Messrs. Livesey & Henderson, Consulting Engineers to the Nyasaland Railways; and J. R. Best, Acting Chief Mechanical Engineer, Sierra Leone Railway. The observers from Ceylon and Malaya were Mr. L. A. A. Peiris and Mr. A. J. Ball, respectively.

Besides Mr. Gorell Barnes and Mr. Bunning, Mr. M. A. Willis, of the Colonial Office Supply Department, has been attending the Conference, and the Crown Agents for the Colonies were represented by Mr. A. Campbell (Chief Mechanical Engineer); Mr. J. W. Norris, Chief Inspecting Engineer; and Messrs. A. C. H. Illston, E. W. Selby, and E. W. Greaves (Mechanical Engineers). For some time the Crown Agents have been doing valuable work in helping to effect a considerable measure of standardisation, and this Conference was a logical outcome to the results already achieved.

Lt.-Colonel G. R. S. Wilson, Chief Inspecting Officer of Railways, Ministry of Transport, and Colonel R. J. Walker have attended for the Minister of Transport. The other British members have included Sir William Stanier, Major-General G. S. Szlumper (representing the Locomotive Manufacturers Association), Messrs. H. Green and A. Holloway (representing carriage and wagon manufacturers), and Mr. E. Woodbridge (representing the British Standards Institution).

As we have pointed out, no binding decisions have been made, but individual systems will be free to implement the recommendations of the Conference as far as the situation of each allows.

An International Electrical Forum

NOT only was much valuable information exchanged at the technical sessions of the I.E.E. convention on Electric Railway Traction last week, but, during the four days of the meeting, there were welcome opportunities for personal contact between electrical engineers of many countries. The importance of learning from the experience of workers in conditions different from those at home was referred to by Professor E. B. Moullin, President of the Institution of Electrical Engineers, when opening the convention, and the hint no doubt was followed up as keenly by the many visitors from abroad as by their hosts. Time was found during a fairly short convention with a busy agenda—there were 29 papers for discussion at the six technical sessions—to inspect electric railway installations and equipment. On Tuesday, March 21, the Liverpool Street-Shenfield line of the Eastern Region was visited, the party travelling by special train which took them to Ilford for an inspection of the car sheds, and to Chadwell Heath for a tour of the electric control station and substation. The paper by Mr. H. H. Swift on the electrification of the Liverpool Street to Shenfield lines, which was summarised in our March 24 issue, had been presented at the session on the preceding afternoon.

On Wednesday, March 22, an exhibition of Southern Region electric and diesel-electric locomotives and multiple-unit rolling stock was held at Waterloo Station. Among the exhibits was the latest of the three Southern Region electric locomotives, No. 2003, painted in a special livery for the occasion. After the inspection the visitors were entertained to lunch at the station. Some operating experiences with the Southern Region locomotives were described in the paper by Mr. W. J. A. Sykes presented at the evening session. The visit on Thursday, March 23, was to the L.T.E. Acton Works, where an extensive reorganisation has been carried out recently. On this occasion delegates were able to inspect some of the maintenance procedures which formed the basis of discussion on the papers presented at the evening session.

As reported last week, a dinner was held at the Waldorf Hotel by the Council of the Institution of Electrical Engineers on the opening day of the convention, March 21. Next day delegates were entertained to dinner at the Savoy Hotel by British Insulated Callender's Cables Limited, the company responsible for supplying the overhead equipment on the Shenfield line.

Among the visitors to the convention from abroad were several representatives of the French National Railways and the French electrical industry. It may be recalled that the late Sir Nigel Gresley acknowledged his indebtedness to the work of French engineers in the field of steam traction, and it is certain that an exchange of knowledge on electric practice between the two countries will be no less fruitful. The new mixed-traffic and express locomotives for the Paris-Lyons line seem likely to give proof of a degree of versatility in the d.c. machine hardly envisaged in the past, while the forthcoming trials of traction at 50 cycles in France will be watched with equal interest by all countries, whether they are committed so far mainly to d.c. or the usual forms of low-frequency a.c. Other visitors from neighbouring d.c. countries came from Belgium and Holland, where extensive main-line conversions are under way which have considerable interest from the point of view of technical discussion in that they favour 3,000 V. and 1,500 V. respectively. Although a.c. practice did not feature as much as some might have wished in the papers, the opportunity for exchanging ideas on this matter arose from the presence of delegates from Switzerland, Sweden, and Norway. Italy also was represented, and very opportunely considering the energetic reconstruction of war-damaged electrified lines carried out in recent years, together with the development of high-speed railcar type trains for inter-city services. Commonwealth countries contributed several papers to the convention on their particular problems and practice and sent representatives to the meetings.

The somewhat varied aspect of electric traction and associated mechanical practice when viewed on the international scale affords ample material for convention papers. Ultimately it may be supposed that greater uniformity will emerge. A convention such as that held by the I.E.E. last week is an effective means of guiding development along the lines proved most useful by the widest range of experience available. All who attended will agree as to the success of the convention, thanks to the work of organisers and participants alike, as a stimulus to further development.

Co-ordination of Freight Rates

FROM time to time in transport, what may be termed an operative word, achieves prominence and is then succeeded by another, often as little understood in its closest applications. Until relatively recently "co-ordination" was held out as the objective of transport policy. Just before the war in this country the "Square Deal" campaign was aimed at the co-ordination of road and rail transport, and there were many of the less sceptical who thought that if this was attained, many of the ills which beset the railway industry would be cured. By the time peace had returned and nationalisation of inland transport had assumed practical shape, "integration" had come to the front.

At the present time the major transport legislative enactments of Great Britain and Ireland stipulate that one of the principal objectives shall be the provision of a "properly integrated" system of transport. Mr. J. R. Pike, Chief Rates & Charges Officer, Railway Executive, in a paper read before the Northern Ireland Section of the Institute of Transport on March 16, performed a useful service in pointing out the important difference in the two expressions "co-ordination" and "integration," with particular bearing on the subject of transport rates. "Co-ordination" is more limited in its meaning than "integration," and implies a sense of equalisation which can be applied to otherwise separate and distinct entities. "Integration," on the other hand, suggests a much closer welding into one whole and connotes a fusion of activities which can be achieved only when financial interests and management are one.

Mr. Pike's paper was entitled "The Co-ordination of Freight Transport Rates," and he was at some pains to explain the differences which exist under the British Transport Act of 1949 and the Transport Act (Northern Ireland) 1948. After summarising the provisions in relation to the charges schemes under the British Act, he pointed out that the Northern Ireland Transport Act is

more reminiscent in its provisions of the earlier British Railways Act of 1921. In some respects, particularly as regards risk conditions and alternative charges, specific provisions are made and the requirements are in more precise and rigid terms than is the case with the British counterpart.

The general objectives of a charges scheme for merchandise traffic Mr. Pike summarised as: (1) to provide an orderly and coherent system of charges; (2) to meet the reasonable needs of trade and industry; (3) to furnish an adequate revenue in return for services rendered with due regard to economy and efficiency; (4) to maintain the charges for such services on a reasonably competitive footing, and (5) to facilitate the purpose of the integration of transport. The outline scheme recently published by the British Transport Commission, now being considered by trading interests, is based on the underlying principle of a common approach to fundamental matters of conditions of carriage, classification and distancing. That is to say, it is designed on the footing that these three features, which are the foundation of any scheme of charges, as far as possible shall be common to all three forms of transport—rail, road, and canal—within the ambit of the Commission's responsibilities.

Contrary to the position in Northern Ireland, conditions of carriage in Great Britain have been standardised on the basis of carrier's risk. A new proposal so far as the railways are concerned is the adoption of the principle of the limitation of liability. Hitherto, efforts in the direction of co-ordination of rates have been confined broadly to the equalisation of charges at points at which the interests of alternative carriers touched. The draft scheme is an attempt at the integration of the rates structures and the provision of a common foundation for the charges to be made by the nationalised undertaking.

It has been said that charges policy will provide the key to integration. No plan of integration can be soundly laid or effectively carried out in the absence of an ordered and properly related system of charges. To that extent, therefore, a charges scheme can be regarded as a prerequisite of integration. Nevertheless, as Mr. Pike was careful to point out, it is a mistake to suppose that integration can be brought about by a charges scheme of itself. The broad plan of traffic policy also must be determined in the light of all the factors, physical and financial, which are entailed. The charges scheme in its detail can then be shaped to facilitate those objects. It is worthy of note that in Northern Ireland, the Ulster Transport Authority does not intend to produce its unified rates structure until the economies to be effected under full co-ordination have been achieved.

Locomotive Development on the G.W.R.

IN his paper entitled "G. T. Churchward's Locomotive Development on the Great Western Railway," which he read to the Institution of Locomotive Engineers on March 22, Mr. K. J. Cook, Vice-President of the Institution, said that the striking developments of locomotive practice which took place while Churchward was Chief Mechanical Engineer of the G.W.R., appeared largely due to his personality and depth of vision, and the stages by which these matured were characterised by rapid intensive scheming and sectional experimentation, so that the first full-scale trial either met with his approval or clearly indicated any minor modifications necessary.

His environment was no doubt of strategic importance in two ways. The beauty of that part of Devon where he was born had its influence on the artistic externals of his engines, and he was also fully aware of the diverse requirements of the locomotives he was to produce in negotiating the very heavy gradients in South Devon and Cornwall, as well as the high-speed possibilities elsewhere. It had been written that when Churchward took charge of the locomotive department of the Great Western Railway its locomotive stock was in dire need of development. Mr. Cook submitted that this statement should be considered in its correct perspective and in conjunction with the circumstances of the time; no doubt the intense fight over the battle of the gauges had cast its spell over development until the issue was no longer in doubt.

Nevertheless, there were some good standard classes either in service, or in production, during the early years of the Churchward regime, and it was surprising how easily many of these in due course were able to incorporate new standards; some, undoubtedly, became outclassed by immense forward strides which early developed, but some are still in service 50 years later. Continuing, Mr. Cook said that the main-line passenger engine of the nineteenth century was in general a "single-wheeler," but the four-wheel coupled engine was just being developed in order to obtain greater adhesion and power. Dean had introduced the "Dukes" or "Devons" and the "Bulldogs" in 1895 on account of the gradients west of Newton Abbot, and it appeared that Churchward based his boiler development with the boiler for the "Bulldog."

It was a bold step to plunge suddenly into a six-coupled fast passenger era. The large *versus* the small engine controversy, said Mr. Cook, was not dead yet; hence, the third group of the Dean engines were built in quantities to fill the gap at the beginning of the twentieth century, while the Churchward standard engines were developing. The conception of the Churchward series of main-line engines appeared on a drawing dated January, 1901, and was an interesting document which provided the foundation for comprehensive locomotive development. It was interesting also to ponder on the extent to which later developments fitted into the general picture. The drawing outlined six standard engines within the group, indicating a number of common components, and it was but a small step from this to the development of the famous nine standard locomotives. The main particulars of the six engines outlined were:—

Engine type	Wheels (dia.)
4-6-0 express passenger engine	6 ft. 8½ in.
4-6-0 mixed-traffic engine	5 ft. 8 in.
2-8-0 freight engine	4 ft. 7½ in.
4-4-0 passenger engine	6 ft. 8½ in.
4-4-2T passenger tank engine	6 ft. 8½ in.
2-6-2T mixed traffic tank engine	5 ft. 8 in.

In dealing with detailed developments, Mr. Cook said that Churchward gave early attention to the principle of superheating, and the first engine to be fitted with this was engine No. 2901 in 1906. It was a Schmidt superheater. Next year a 4-cylinder "Star" class engine was fitted with a Cole superheater; subsequently, three designs of a Swindon superheater were fitted. Churchward did not favour a high superheat, and he decided that his requirements were met with a low degree of superheat which was sufficient to ensure the absence of condensation in the cylinders.

The Swindon testing plant was installed in 1903, and among other uses to which it was put was the obtaining of data in connection with smokebox design, and the even distribution of the gases to ensure a uniform flow through the bank of tubes. Smokebox proportions were regarded as of great importance, and the Great Western engines during that development were fitted with smokeboxes larger than the dimensions prevailing elsewhere; among the features which were investigated were the relationships between the blast-pipe lip, chimney height, and choke diameter, and as a result of the experiments a standard formula embracing these dimensions was evolved.

Two sizes of piston valves were utilised throughout the standard range of engines, 8 in. and 10 in. nominal diameter and these went up in oversize steps of $\frac{1}{16}$ in. up to $\frac{1}{2}$ in. oversize. Churchward indicated a wear figure of 0·030 in. at which the steam chest should be re-bored, and Mr. Cook said it was interesting to note that research into piston valve design some years after Churchward had retired, confirmed that the limits he had laid down were, in fact, the ideal. During his tenure of office, 888 of his standard locomotives were produced, of which 586 are in service today, and since his retirement 862 more (including "Hall" class and those to be built during 1950) have been added, and compose a range conceived nearly 50 years ago, still capable of competing on level terms with any standard range of modern British locomotives.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Uniform Fare for London

March 18

SIR,—Does not your correspondent Mr. L. R. Jones, in your March 17 issue, deceive himself when he states that the B.T.C. has produced a plan for the London area similar in many ways to that which he suggested in July last? A comparison of the two plans reveals hardly any point of similarity, for whereas Mr. Jones proposed uniform single, day return and monthly fares at rates of approximately 1½d., 1d. and 1¼d. respectively, per mile, for bus, tram, trolleybus, coach, L.T.E. train or R.E. train, the Commission's London Area (Interim) Passenger Charges Scheme provides for uniform single fares at 1½d. per mile for the first two miles and thereafter at approximately 1¼d. per mile for L.T.E. road and rail and for the former L.T. & S. section of the Railway Executive only, with *no* reduction for return journeys (except with concessional early morning fares). For all other Railway Executive lines within the London area, the single fare will remain at 2·44d. per mile and monthly return at 1·63d. per mile, but new day returns at 1¼d. per mile each way (2½d. per mile on single journey mileage), slightly in excess of single fare for double journey, will be introduced between all points within the London area.

Yours faithfully,

LONDONER

London, S.W.1

Railway Fares

March 13

SIR,—In his article of February 24, Mr. J. H. Laundy says that, while one school of thought contends that a substantial reduction in fares would secure an increase in gross receipts, another school (to which he clearly belongs) maintains that the loss from reduced charges could never be made up from the new traffics.

May I remind him that the railways—both before and since the war—have admitted that in every case where they have reduced rates and fares, they have recovered the traffics from the roads and increased their receipts! Could plainer proof be required that the first school is right?

He claims that it is never possible to know what the receipts would have been had no such change been made. Yet, on the Sunderland branch, the number of passengers (who had averaged only 16 daily) and receipts increased by several hundred per cent. on the first day the lower fares were introduced! Let us now have the total results for January and February, compared with November and December. On what conceivable grounds he claims that "it is manifestly absurd" that similar results would not be obtained on all the other branches, and throughout the country generally, nobody knows!

Mr. Laundy, in your March 10 issue, accuses me of being indifferent to the fate of the road transport industry, but, as railwaymen, it is not our business to study the interests of our rivals. Our business is to beat them in services and prices. Road operators have proved themselves capable, enterprising and successful, and I am sure they do not want any instruction, or guidance, from our railway accountants.

In regard to Mr. A. J. V. Merritt's letter in your March 17 issue, the old directors may have been capable men in matters of high finance, but, because they lacked practical experience in operating the traffics, they could not be brought to appreciate the substantial economies attainable from using much larger wagons. Even their accountants have never yet understood their operating economies—which probably was the main factor influencing the old directors in their negative attitude.

Referring to tipplers, in no other country are these cumbersome, slow and costly methods used for performing so simple an operation as unloading a truck of coal, or other minerals. The traffic officers of the L.M.S.R. have already demonstrated that 480 tons of coal can be unloaded from twelve 40-ton self-discharging wagons in a few minutes, without tipplers. It can be dropped on to the ground, into bins, or on to conveyor-belts at works. Even the 3 ft. 6 in. gauge Nigerian Railway uses 50-ton self-dischargers for minerals, although its total traffics amount to only 1¼ million tons a year.

Yours faithfully,

E. R. B. ROBERTS

Eynesbury, St. Neots

Mechanics of Wheel and Rail

March 20

SIR,—I was interested to read the article in your issue of March 3. As mentioned in the fifth paragraph, experimental profiles *b* and *d* do not reproduce the conditions proposed by Dr. Davies and Mr. Cook. If the worn profiles may be superimposed on the corresponding new ones, unduly rapid wear of the flange appears to me to have occurred with the grooved tyres.

The intention of the original proposal was to substitute elastic flange impact for a periodic yawing couple of non-impulsive character, and it may find useful application in the restricted sphere of non-guiding wheels. A solution to this particular problem of the New South Wales Government Railways would more probably be found in the provision of reduced flangeway clearances and thicker flanges.

Yours faithfully,

W. E. GELSON

Little Barn, Radlett

Travel in England

February 27

SIR,—I was most interested in Mr. Boyd-Carpenter's letter in your February 24 issue.

On Saturday, February 25, I took a seat on the 11.45 a.m. train at St. Pancras to Sheffield. This train travels *via* Leicester, Trent and Sheffield to Bradford. A little while before the train was due to start, officials came along and told passengers there had been a derailment on the main line and that the train might be seriously delayed. At the same time a similar announcement was made over the station loudspeaker equipment and passengers were advised to make their way to Euston or Kings Cross.

To use Mr. Boyd-Carpenter's expression, one wonders if anyone had the wit to know that none of these destinations can be reached direct from Euston and that the first train from Kings Cross was 1.30 p.m. Further, had no one the knowledge that there was the 12.15 p.m. train from Marylebone which serves at any rate some of the destinations which passengers were wanting to reach.

I told several of them whom I happened to hear say they were going to Sheffield that they could get this train at 12.15 from Marylebone. I travelled on this train, and I noticed several of the other passengers travelled on it also, but why couldn't the railway people have told us that?

It is this sort of thing which is so unhelpful and so discouraging. The railway people began the right way by warning passengers about the delay, but surely they should have had some better knowledge of their own timetables.

Yours faithfully,

H. R. CAUFIELD-GILES

Bellground, Hoyland Common, nr. Barnsley

THE SCRAP HEAP

"Dunrobin" Arrives at New Romney

The 0-4-4 tank engine *Dunrobin*, formerly owned by the Duke of Sutherland, arrived at New Romney, Kent, on March 28, where it is to be placed on show to passengers on the Romney, Hythe & Dymchurch Railway. Among those who travelled on the footplate of this famous engine were King Edward VII, King George V, the Duke of Windsor, and King Alfonso XIII of Spain. *Dunrobin* is expected to go into the R.H. & D.R. museum at New Romney.

Old Broad-Gauge Locomotive

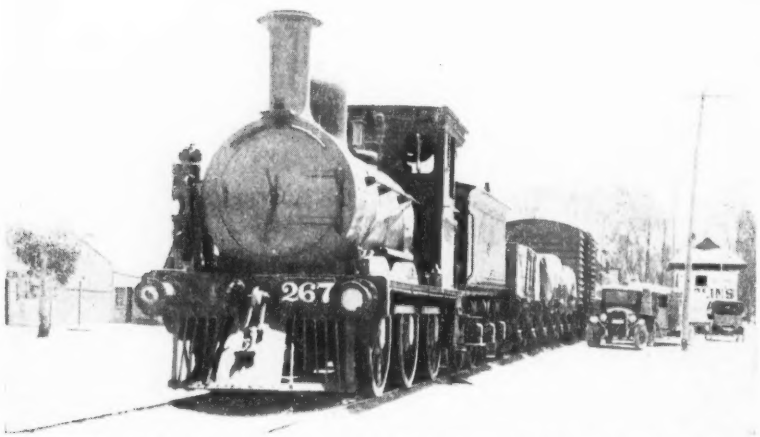
Details of the oldest 5 ft. 3 in. gauge locomotive in service in Victoria, which is the subject of an accompanying illustration, have recently been received from Mr. Guy Bakewell, of Kew, Victoria. The locomotive is a "T" class 0-6-0 tender engine built at Ballarat by the Phœnix Engine Co. Ltd. in 1884, and was numbered 145 by the builders, which produced many early locomotives for Victoria.

Fan Mail for Li Chin Hua

The New China News Agency from Peking reports that the 15-man crew of the train known as "The Masses" which makes the 500-mile run between Kirin and Mukden in Manchuria have won for their train the title of "the finest in Manchuria." This they have done by their unfailing attention to the needs of their passengers who express their thanks in a large fan mail to the crew.

Conductor Li Chin Hua believes that no problem presented by his passengers is incapable of solution. Recently, when a pregnant woman passenger was found to be near her time, Li broadcast an appeal for assistance over the loud-speaker system, and the call was answered by two elderly women and a nurse.

When the baby had been safely delivered *en route*, Li reported the happy event by the same system, and gifts of eggs and delicacies were soon forthcoming. On arrival at Mukden, Conductor Li hired a horse-drawn cab, and persuaded another of the passengers to take the mother and child home.



"T" class 0-6-0 locomotive owned by Kerang Shire Council, on a mixed train at Koondrook

Photo] *[Guy Bakewell*

The Victorian Railways numbered this 0-6-0 locomotive 267, and in 1923 sold it to the Kerang Shire Council, which operates an independent light railway, 14 miles long, from Kerang in Northern Victoria to Koondrook, an inland port on Murray River. Notwithstanding its 65 years of active life, the engine continues to operate a daily service on the Shire Council's line.

Some principal dimensions are as follow:—

Boiler pressure	160 lb. per sq. in.
Cylinders (2)	16½ in. dia. by 20 in. stroke
Driving wheels, dia. ...	4 ft. 3 in.
Total heating surface ...	865 sq. ft.
Tractive effort at 85 per cent. b.p.	14,520 lb.
Weight of engine and tender in working order ...	58 tons
Overall length	52 ft. 8 in.
Tender capacity, coal ...	3 tons 10 cwt.
" " water ...	2,600 gal.

Road Safety Week

A total of 35,000 drivers of British Road Services are co-operating in the Children's Safety Campaign for 1950 organised by the Royal Society for the Prevention of Accidents. The Road Haulage Executive, and the Trades Unions representing the majority of the staff, have agreed to join in the appeal issued by the Royal Society to all road transport workers.

Posters will be displayed in the depots and garages of British Road Services, leaflets will be issued to drivers, and the trade unions will organise the collection of subscriptions. In addition the local joint committees representing management and staff are being asked to consider what further measures can be taken to avoid accidents.

One of the first steps taken by the Road Haulage Executive after setting up its organisation was to arrange for all its drivers to be entered for the Safe Driving Competition of the Society.

To the Golden West for $1

The March issue of the American *Brotherhood of Locomotive Firemen & Enginemen's Magazine* quotes a paragraph from the San Francisco *Chronicle* which recalls the famous rate war waged by the railways in Southern California in 1886. At one time, in an effort to attract agricultural settlers and eventually obtain their freight business, they reduced the passenger fare from Kansas City to Los Angeles (1,776 miles by the shortest Santa Fe route) to one dollar.

"A 'Lunatic' Line"

What a considerable section of public opinion in England some fifty years ago thought of the Uganda Railway project (the history of which is given in an article elsewhere in this issue) is illustrated by the following lines from the periodical *Truth*, written by its editor, Labouchère:—

What it will cost no words can express;
What is its object no brain can suppose;
Where it will start from no one can guess;
Where it is going to nobody knows.
What is the use of it no one can conjecture;
What it will carry there's none can define;
And in spite of George Curzon's* superior lecture:
It clearly is naught but a lunatic line.

Get More Passengers to Rails

(British Railways are urging members of their staff to secure more passengers)

Make it known in clubs and pubs,
Tell Boy Scouts and little Cubs,
Let Girl Guides and Brownies know,
Of special trains and where to go.
Spread the news in works and mills,
Broadcast in the vales and hills:
How, for an inclusive fare,
Rails will take one anywhere.
Speak to secretaries, too,
Tell them all there is in view:
Summer outings—theatres—shows,
Pantomimes (e'en when it snows).
Football specials cater well—
Luncheons—dinners—are quite swell.
Cricket matches soon will start,
Now's the time to play your part.
Here's some news (since days of yore),
"Cruiser" trains are now in store;
These will prove a boon to rails
(In spite of pessimistic wails).
Re-unions and Sunday schools,
Mothers' days, and "picnic pools":
All of these the rails can take,
Tell them now, for goodness' sake!
Please get busy, for 'tis Spring,
See what business you can bring,
So that when the year does end,
Rails will show an upward trend.

W. E. N.

* Then Under Secretary of State for Foreign Affairs

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

ISRAEL

Through Passenger Services

Passenger service between Tel Aviv and Jerusalem, and Haifa and Jerusalem was inaugurated on March 2, with one train daily each way. In the up direction, trains from Tel Aviv and Haifa will join at Lydda, and proceed as one train, and in the down direction the daily train from Jerusalem will divide at Lydda for Tel Aviv and Haifa. The scheduled time for the journey is 2 hr. 20 min.

CEYLON

Observation Car

One of the diesel railcars imported recently from Britain has been converted to an observation coach, for viewing the scenic beauties of the countryside which the line traverses, especially the hilly sections beyond the Kadugannawa Incline. The interior panels are decorated with oriental designs. The car includes a bar counter. Tests were carried out satisfactorily in January and the coach will soon be in service.

WESTERN AUSTRALIA

Capacity of Northern Line

Traffic on the Northern line has been limited by single-line working between Branxton and Singleton. As heavy rails were not obtainable, it was at first decided to construct a second track with second-hand permanent way, to be worked as an auxiliary single line for light traffic. Subsequently, however, a French firm received an order for the required new rails, and work is now in hand on doubling the 15-mile Branxton Musswellbrook section in the normal way, and equipping it with automatic colour-light signalling. In addition, 1,800-ft.-clear refuge sidings are to be provided near Belford and Whittingham, with points remotely controlled from the nearest signal boxes. These stations are situated as follows: Branxton is 34, Belford 39, Whittingham 46 and Singleton 49 miles north of Newcastle.

Beyond Singleton, where the yard is to be remodelled and near which gauntletted tracks will be temporarily provided over the Hunter River bridge, a deviation will be constructed to obviate a 1 in 40 rising gradient facing down trains, and avoid the present use of assisting engines.

Employment of Displaced Persons

The railways are employing approximately 520 displaced persons, or "New Australians," as they are termed, on works associated with the permanent way. Of this number, 350 are in the regular permanent-way gangs, 110 on construction work, and 60 with the works and buildings section.

At the beginning of 1948 the labour shortage was severe, a number of the maintenance gangs consisting of only two men, and others three. The arrival of the immigrants therefore was timely, and those available for railway work were quickly absorbed.

One of the first quotas allotted to the Department was drafted to ballasting work at Merredin. Composed mainly of single men, they were housed in tents and provided with cooking and other facilities. On the whole, these men did excellent work, and, on completion of the job, were distributed in twos and threes among the more hard-pressed of permanent way gangs, where their work has been excellent, considering that almost none had previous railway experience.

In the maintenance gangs, the "New Australians" are distributed throughout the whole system, being placed at stations as far apart as Tuckanarra on the Northern Railway, Murrin Murrin in the Eastern Goldfields, Mount Barker on the Great Southern, and Pemberton and Margaret River in the South Western area.

ITALY

Container Services

The State Railways are planning to develop their container services through the large-scale adoption of special types of containers for the conveyance of wine, fresh and frozen fish, fresh and frozen meat, bicycles, and other goods. An alternative scheme is to encourage firms usually handling these and other commodities to build their own containers.

Wagons on Road Transporters

After successful tests the conveyance of wagons between stations and consignors' or consignees' premises, without private sidings, by road transporters, the State Railways have decided to extend this system of door-to-door traffic to the following towns: Milan, Rome, Turin, Verona, Spezia, Florence, Palermo, Naples, Treviso, Vicenza, Reggio, Emilia, Fano, and Ferrara.

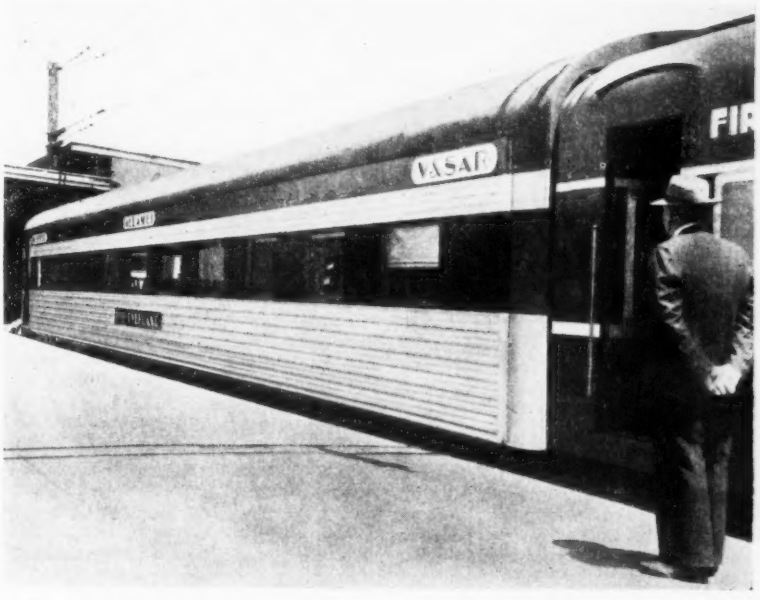
FRANCE

Rise in Rates Postponed

The expected rise in freight rates has been postponed by the Government. Although passenger rates were raised in January, the corresponding rise in freight tariffs is still under discussion. The S.N.C.F. proposed a rise of about 13 per cent. accompanied by a reduction of 2½ per cent. in the ceiling rates of the freight tariffs.

The financial situation of the S.N.C.F. makes a rise appear inevitable eventually. For 1950, the railway deficit was estimated at fr. 84,000 million, or more than £84,000,000. Parliament voted a grant in aid of fr. 50,000 million.

"Overland" Express Sleeping Car



One of the nine new "Roomette" type sleeping cars in use on the "Overland" express between Melbourne and Adelaide, operated jointly by the Victorian and South Australian Railways (see paragraph in our December 23, 1949, issue)

Photo] [G. Bakewell

or more than £50,000,000. The S.N.C.F. considers that economies of between two and three million may be effected. The rise in passenger rates is expected to bring in more than £12,000,000. This would reduce the deficit to about fr. 18,000 million, or more than £18,000,000.

Laroche-Dijon Electrification

Regular electric traction between Laroche-Migennes and Dijon was officially inaugurated on March 15. The inaugural train, conveying Monsieur Tissier, President of the S.N.C.F., and officials and guests, performed the journey between Laroche and Dijon in 1 hr. 32 min., at an average speed of nearly 64½ m.p.h.

GERMANY

New Mitropa Sleeping Cars

An order for 16 sleeping cars of a new type, evolved by the German Mitropa Sleeping Car Company, was recently placed with three wagon-building works in Western Germany (Wegmann & Company, of Cassel, Waggonfabrik Uerdingen, and Waggonfabrik Cologne-Deutz). They have single-berth compartments only, and the berths are arranged longitudinally. Twenty single-berth compartments will cover the same floor area as formerly occupied by twenty passengers in double-berth compartments.

Each pair of compartments has to be sandwiched so that the foot end of a berth in a lower compartment reaches under the berth of the adjoining upper compartment. The difference in height of the floors of the lower and upper compartments is one step only, and no ladders are necessary to reach the berths. Each sleeping car is to have two lavatories and luminous signals in the compartments will show whether they are engaged. There will be sliding doors between each two compartments to enable suites to be formed if required. The first units are expected to be in service by June.

SAAR TERRITORY

Autonomous System

The agreement signed at Paris on March 3 between France and the Saar Territory includes an autonomous administration for the railways within the Saar Territory which are being administratively severed from the German Federal Railways. The original French proposal to incorporate the Saar railways in the French National Railways was dropped during the negotiations.

The Saar railways are to be known as "Chemins de Fer Sarrois" or "Saarländische Eisenbahnen," with headquarters at Saarbrücken, hitherto the seat of a divisional headquarters of the German Federal Railways. The new administration, which will be under the Government of the Saar Territory, is to be headed by a board of six Sarrois and six French members, with the Chairman appointed by the Government of the Saar, which will also appoint the General Manager, after consultation with the French Government. The Saar Railways are to adopt the same fares and rates as the French National Railways. The latter are bound to offer the Saar Railways all possible technical assistance; also, as necessary, to place rolling stock at their disposal.

The route-mileage of the Saar Railways is about 300. The present Saar Territory is larger than that which existed between 1918 and 1935. The population is about 1,000,000. In October, 1947, the Saar voted for economic union with France. The economic mainstay of the Territory is coal, of which the present annual output is 14,000,000 tons, the majority exported, mainly to France. The Saar also imports coal from the Ruhr, an average of 70,000 tons a month, needed in addition to the coke consumed by its iron and steel industry.

U.S.S.R.

Output of Wagons in 1949

According to estimates from American sources 100,200 wagons were turned out by the Russian rolling stock industry in 1949. This was about 47 per cent. more than in 1948, for which a total of 68,200 new goods wagons was estimated, and more than double the output of 1940 (47,000 wagons).

Publications Received

The Central.—The hundredth issue, that of December, 1949, of *The Central*, the journal of the old students of the City & Guilds College, contains a foreword by the Lord Mayor of London, and congratulatory messages from the City Companies, eminent Old Centralians, and other associated with the college. The Central Institution of the City & Guilds of London Institute was founded in 1885, and *The Central*, so designated before the college changed its name in 1911, first appeared in November, 1903. The current issue reviews 50 years of the history of the college and its *alumni*, and of the journal, besides dealing with current activities. The new coloured cover displays the arms of the City and of the Guilds to which the college owes its existence.

Steam-Engine Builders of Suffolk, Essex, and Cambridgeshire. By Ronald H. Clark. Norwich: The Augustine Steward Press. 8½ in. × 5½ in. 141 pp. Illustrated. Paper covers. Price 6s. 6d.—The author has taken an outstanding part in preserving what is still surviving of the engineering records of East Anglia, and the present book is a sequel to his "Steam Engine Builders of Norfolk." Much of the information concerns stationary engines and road traction engines, as well as agricultural machinery, but various interesting locomotives have also been built in the Eastern Counties, apart from those at the well-known railway works, such as Stratford. In the case of Stratford, the author has confined his attention to lesser-known products, but elsewhere he has arranged alphabetically under the names of the builders, much interesting information which otherwise might have been lost. Locomotives built in East Anglia include the first for China (by Ransomes & Rapier) and many other unusual units of interest. Unfortunately, the book contains many inaccuracies, partly (but by no means always) as a result of the only surviving information being memory or tradition.

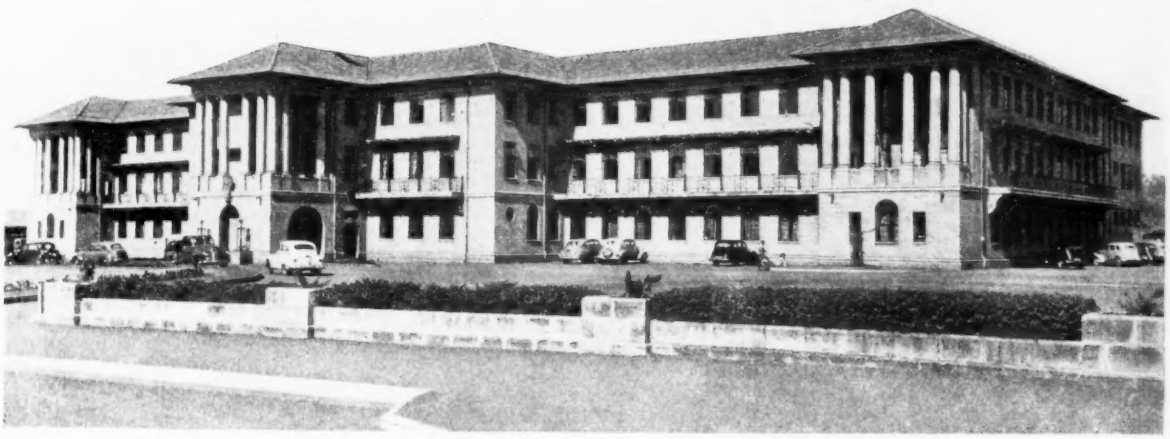
Mechanical Handling Equipment.—An illustrated booklet has been issued by the Chloride Electrical Storage Co. Ltd., Manchester, makers of Exide-Ironclad batteries, showing how industry can increase output and reduce costs by using battery-operated electric trucks. Examples are given, supported by statistics, showing how time and labour can be saved by mechanical handling methods, and how unskilled labour can handle three times the loads previously dealt with by adult labour with hand-trucking methods, thus releasing skilled labour for more important work. Reduction in fatigue also makes for more efficient and more contented labour.

Engineering as a Career. The firm of J. Stone & Co. Ltd., Deptford, has published a brochure describing its apprenticeship schemes for three groups, namely, trade, student, and graduate apprentices. Besides some excellent photographic illustrations of apprentices at work, there are charts of the educational and promotion ladders for the three groups—including inter-group promotion—and of a five-year training scheme for trade apprentices. Also included is a short review of the history and activities of the firm and an appendix giving information which will be of considerable value to boys leaving school.

British Electrode Classification.—The 1949 edition of Booklet No. 135, issued by the Arc Welding Electrode Section of B.E.A.M.A. in collaboration with the Institute of Welding, contains information of considerable value to users of arc welding electrodes. Included is an amended list of electrodes now being manufactured by the Association, together with code numbers indicating the method of manufacture, current requirements, and the types of electrodes suitable for various classes of work. Also included in the present edition of this publication is a comparison table of British and American electrodes. The publication can be obtained from the Welding Section of B.E.A.M.A., Kingsway, London, W.C.2. It is priced at one shilling.

Development of the Kenya & Uganda Railway—1

This railway, major unit of the East African transport system, has been the chief contributor to the progress of the colonies it serves



Headquarters of the East African Railways & Harbours at Nairobi

NAIROBI, the capital of Kenya, which celebrates this year the 50th anniversary of the establishment of local government in the town, is being raised to the status of a City; the Royal Charter conferring this honour was presented by the Duke of Gloucester on March 30.

The city owes its origin to the construction of the Uganda Railway. When the line from Mombasa reached Nairobi, on May 30, 1899, the site of the present town was a bare, open plain, the grazing ground of herds of wild game. A base was set up with a workshop and stores depot, and some few months afterwards the headquarters of the railway was transferred thence from Mombasa.

"Nairobi has, with great judgment, been selected as the site for the principal workshops," wrote the distinguished railway engineer, Sir Guildford Molesworth, who visited East Africa at the time. "It is about 5,500 ft. above sea level, which ensures a comparatively salubrious climate; there is ample space of level ground for all requirements, and excellent sites for the quarters of officers and subordinates on higher ground above the station."

Nairobi has developed into a flourishing city, with a population of some 120,000. Besides being the administrative capital of Kenya Colony, it is the chief commercial centre of the East African territories and the seat of the East African High Commission. The headquarters of the East African Railways & Harbours is also situated at Nairobi, with the principal workshops and stores depots. Nairobi is a railway town by origin, and the railway still provides its biggest industry.

In August, 1895, the British Government decided to construct a railway from Mombasa to the eastern shore of Lake Victoria, to secure reliable and expeditious communication with Uganda, where a British Protectorate had been set up. Possible routes had already been surveyed on behalf of the Imperial British East Africa Company, which had been granted a charter in 1888 to develop and administer the British concessions in these territories. In 1890, the Company engaged Captain (later Lord) Lugard to find a route inland avoiding the waterless Taru desert.

Project Initiated

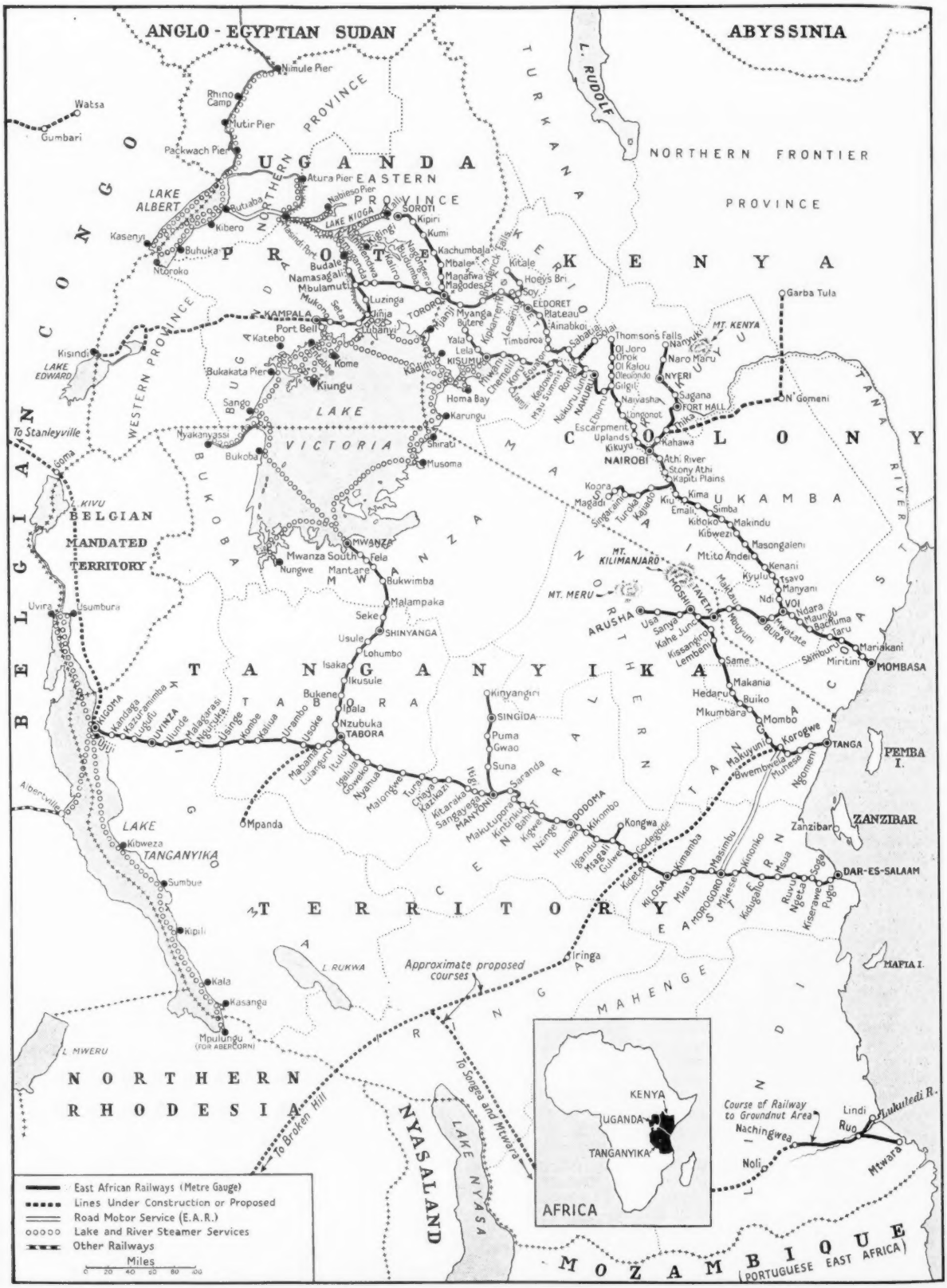
The directors of the company, having wisely decided that Mombasa, with its magnificent natural harbour, must be the terminus of any railway, engaged Sir Guildford Molesworth and Sir John Fowler to advise on the steps to be taken for opening railway communication between Mombasa and Lake Victoria. Both engineers reported favourably on the project, and the company obtained the services of Captain Macdonald of the Royal Engineers.

Macdonald arrived in Mombasa with his party in December, 1891, and in ten months surveyed 2,724 miles. He finally recommended the alignment *via* the Taru desert and the Uasin Gishu Plateau.

Lack of sufficient funds and the absence of government support prevented the company from proceeding with the scheme, and it remained in suspense until 1895 when the company's charter was revoked and the British Government assumed direct responsibility for the administration of the East African territories. The decision to build a railway was taken, and a committee was formed under the chairmanship of Sir Percy Anderson of the Foreign Office to supervise the construction of the line and organise the details of the work. Although several contractors tendered, the committee voted for departmental construction. The track was to be of metre gauge with 50-lb. rails and a 1 in 50 ruling gradient. The gauge was mainly determined by the fact that many of the Indian railways were of similar construction, and supplies of rolling stock could readily be obtained from them in an emergency.

Mr. (later Sir) George Whitehouse, the Chief Engineer, and the principal members of his staff arrived at Mombasa on December 11, 1895. His first problem was to create an organisation equal to that required for the maintenance of an army of 20,000 men. Everything had to be imported. Stores were dumped from lighters at high water and recovered when the tide receded.

By the end of 1896 railhead had reached Mariakani at mile 22. The road to Kibwezi, built at the expense of Sir William Mackinnon and carried on to the Lake by Captain Sclater, R.E., proved of inestimable benefit. In 1898 one of the advance survey parties advised the Chief Engineer that a prac-



Map of the East African Railways, showing also road and inland lake and river steamer routes

Early locomotive and train on the Uganda Railway

ticable alignment to the lake could be found along the Nyanda River valley, thus saving 70 miles on Macdonald's route After investigation this alignment was adopted by Whitehouse. In 1899 railhead reached Nairobi, to which, in July, headquarters were transferred from Mombasa.

Main Line Completed

The negotiation of the Rift Valley gave trouble. Strikes in England and the outbreak of the South African War in 1899 delayed the arrival of the viaduct steelwork. So as not to hold up progress, Whitehouse constructed an incline down the face of the escarpment and continued the track along the floor of the valley to the Longonot saddle, where eventually the permanent alignment linked up. On December 20, 1901, the first train reached Lake Victoria, 587 miles from Mombasa. There were still many temporary diversions to be eliminated, and not until October 1, 1903, did the Committee finally hand over to the Protectorate Government.

Although not specially remarkable as an engineering feat, the construction of nearly 600 miles of railway within six years, through trying and difficult country, and in the face of a hostile native population, was a worthy achievement. The original vote of £3,000,000 was greatly exceeded; by the time the line was ready for traffic it had cost £5,503,000. The cost and time the railway took to complete were criticised at home, but subsequent events completely vindicated the project.

For the first 20 years of its life the Uganda Railway made gradual if cautious progress. At the end of the first world war the system consisted of the main line from Mombasa to Kisumu on Lake Victoria, with a branch from Nairobi to Thika; a military-owned and operated line from Voi to Moshi, where it connected with the German-built railway from Tanga; a branch to Lake Magadi, owned by the Magadi Soda Company but operated by the Uganda Railway; and two short lines in Uganda; one between Jinja and Namasagali called the Busoga Railway, linking Lake Victoria to Lake Kioga, and the other running between Port Bell on Lake Victoria and Kampala. Steamer services were operated on Lakes Victoria and Kioga.

It cannot be said that at this date the railway was sound and healthy. Although it has never shown a financial loss after the first year, it was suffering from a grave lack of

Beyer-Garratt 4-8-2 + 2-8-4 locomotive No. 68, "Mubendi," on Nairobi—Kisumu train near Limuru, Kenya

financial resources sufficient to carry out the programme of maintenance and renewals long overdue. The main reason was that the railway revenues were treated as part of the revenue of the Colony, with the result that surpluses were regarded as available for general Colonial revenue purposes, instead of being devoted to the upkeep and development of the railway.

No proper renewals fund existed, and there were serious arrears of maintenance and renewals far beyond the revenue-earning capacity of the railway to make up within a reasonable period, unless the arrangement whereby the railway contributed nearly the whole of its working profits towards the general revenue of the Colony was immediately rescinded.

Even before the publication of the Hammond Report, Lord Milner, then Secretary of State for the Colonies, had decided that the railway finances must be separated completely from those of the Colony. In future, he directed, proper allowance would have to be made under the expenditure head for maintenance costs and renewals fund contributions, and any surplus of revenue over expenditure would be used, first for meeting loan charges on capital and for betterment schemes, and secondly for the reduction of railway rates. This decision, with an improvement in the economic condition of the country generally, and the appointment of a new General Manager, Mr. (later Sir) C. L. N. Felling, previously Chief Assistant to the General Manager of the South African Railways & Harbours, brought about a rapid recovery in the railway finances. At the end of 1923 there was a net surplus of £300,910, and the newly-established reserve funds for renewals and betterment schemes had reached £550,057.

Programme of Expansion

The report of the new General Manager heralded a programme of new construction. The most important item was the extension of the Uasin Gishu line, then under construction from Timboroa to Turbo, 22 miles beyond Eldoret, to join the Busoga Railway in Uganda. At the same time heavy expenditure was being incurred on port development at Kilindini Harbour; on the expansion of the lake steamer services; and on much-needed improvements to existing railway facilities, chief of which was the relaying of the main line from Mombasa to Nairobi with 80 lb. rails.

The five years that followed might be called the "golden years" of the railway's development. In 1924 earnings increased by 49·7 per cent. but expenditure by only 7·8 per cent., over the previous year, and the operating ratio fell to 53·7 per cent., the best result so far achieved. By the following year gross earnings had reached almost double the figure of 1922, and had it not been for the bold expansion programme already referred to, the railway facilities would have been wholly inadequate to deal with the increase in traffic. In 1927 receipts increased to £2,257,000, and after renewals fund contributions and loan charges had been met it was possible to contribute £328,000 to the betterment fund. Since 1922 earnings had increased by 94·6 per cent., but expenditure by only 20·8 per cent.

A steady reduction in freight rates took place; between 1921 and 1923 the charges had been cut on 210 commodities, but the most notable rates reduction of those years was that in respect of maize for export, for which a flat rate of 1s. per bag was introduced. Broadly, the current policy was that sufficient revenue should be earned from highly-valued import traffic to enable exports to be carried at the lowest possible rates, with the object of building up the export industries of the two territories.

The steady increase in the volume of low-rated export traffic in proportion to the total led to an omi[nous] decline in receipts per ton mile, w[hich] caused the Acting General Man[ager], Brigadier General (now Sir) G[eoffrey] D. Rhodes, to sound a warning in hi[s] report for 1926 that "the time may c[ome] when it may be necessary to re[ctify] this position by increasing our e[xport] rates to some extent . . . othe[rwise] the balance of revenue must be [made] up by taxing imports more heav[ily]."

All through the 1920s construc-

Rope-worked incline down the face of Rift Valley escarpment, built as a temporary measure while the permanent alignment was being laid out, and dismantled in 1901

tional development continued unceasingly. By the end of 1926 the Nairobi-Thika branch line had been extended as far as Nyeri, and the Lake Solai and Kitale branches had been completed and brought into operation. The first section of the Uganda extension from Turbo to Broderick Falls, was opened on July 1, 1927, and the final section of the extension, from Broderick Falls to Mbulamuti on the Busoga Railway, was opened to traffic on January 15, 1928. Thus was com-

ported direct rail connection between the Indian Ocean and the source of the River Nile.

A branch from Gilgil to serve the rich, wheat-growing Thomson's Falls district was opened in August, 1929, and in the same year the Tororo-Soroti branch of 101 miles in length was completed. In 1930 the long-projected Kisumu-Butere branch was opened, as well as the final section of the Nairobi-Nanyuki line.

Early the previous year work had been put in hand on the final section of the main line to Uganda, from Jinja to Kampala, which involved the bridging of the River Nile at a point 1½ miles below the Ripon Falls. When this section was opened to traffic in January, 1931, the last stage of the link between Kampala, the commercial capital of Uganda, and the coast had been completed.

Meanwhile the tonnage of traffic handled by the railway lake steamer services continued to grow, and it was often difficult to meet all the demands. New piers were built; new steamers, tugs and lighters obtained; and the principal ports were equipped with the most modern cargo handling facilities. In 1924 the Railway Administration had taken over the Lake Albert marine services from the Uganda Government, and also the road motor service that ran between Butiaba on Lake Albert and Masindi Port on Lake Kioga. By this means the whole of the lake steamer services in Kenya and Uganda was brought under one control, with the through route from the coast to the Belgian Congo ports on Lake Albert, and the River Nile port of Nimule situated on the border of Uganda and the Sudan.

The port facilities at Kilindini Harbour were steadily developed over the same period. By 1927 the first two of the new deep-water berths had been brought into use; two more were completed in 1929, and a fifth in 1931. The lighterage wharf and the Shimanzi oil jetty were finished at the same time, and, with their completion, Kilindini Harbour had a port fully equipped to handle simultaneously alongside the quay six of the largest vessels operating on the east coast of Africa.

Two other events in this period must be briefly recorded. On February 3, 1926, the Kenya and Uganda (Transport) Order in Council was promulgated, under which the name of the railway was changed from the Uganda Railway to the Kenya & Uganda Railway. It provided for the complete separation of the finances of the two governments of Kenya and Uganda from those of the Railway and the Port, and vested the control and management of all railway, port, and other services in the two territories in the High Commissioner for Transport. Finally, it set up a new Railway Advisory Council, of two official and two unofficial members each from Kenya and Uganda, to advise the High Commissioner.

A year later, it was decided to place the ports and harbours on the coast of Kenya under the general manager of the railway administration, and a Harbour Advisory Board was set up to advise the High Commissioner for Transport on port matters. These decisions were given effect to in an Order in Council of December 20, 1927, by which, also, the name was changed to that of Kenya & Uganda Railways & Harbours.

(To be continued)

INSTITUTE OF TRANSPORT MERSEYSIDE AND N.W. SECTIONS.—Brigadier-General Sir H. Osborne Mance, President of the Institute of Transport, visited the Merseyside Section on March 9, when Mr. D. S. Inman, Chairman of the Section, presented a paper on "Certain aspects of the transfer of traffic between rail and ship in the port of Liverpool." On March 10, the President visited the North Western Section, when Mr. Harold Clay, Member of the Road Haulage Executive, presented a paper on "Industrial relations in road transport."

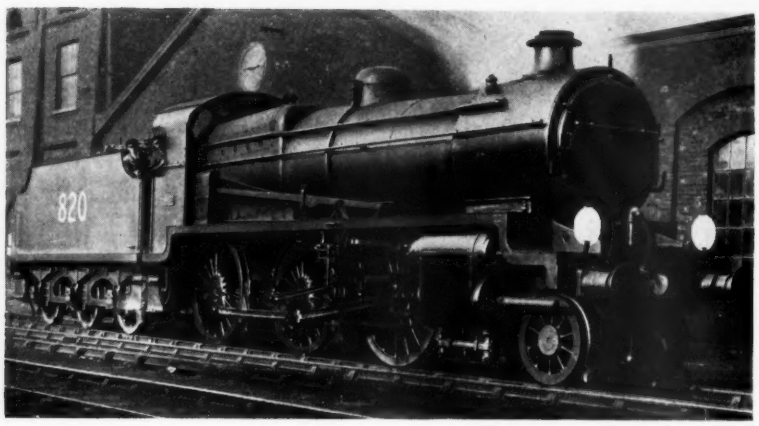
Rome Termini Station

The approach to the new Rome Termini Station, which was described in our issue of July 29, 1949, is now nearing completion, and in the above illustration the suburban platforms are visible on the extreme left

Rolling Stock Standardisation Problems

Consideration of an important topic from the viewpoints of user and builder

By Geo. W. McArd, A.M.I.Mech.E.



South Eastern & Chatham Railway 2-6-0 *"N" class locomotive*

SINCE the railways of this country were nationalised, reference has been made by responsible persons to the need for introducing standard designs for locomotives, carriages, and wagons. Whether the advantages carful planning can produce will be realised, time will show, although this undoubtedly is a most fascinating aspect of railway operation.

In consideration of standardisation, two viewpoints may be held, one of which concerns the user, and the other the private builder. The user sees it from the standpoint of the vehicles in operation, or likely to operate, on the line, and the builder sees it from a manufacturing standpoint and the increasing use of jigs and fixtures. As the two aspects are so different in their objectives, they are discussed separately here, that of railway management being considered first.

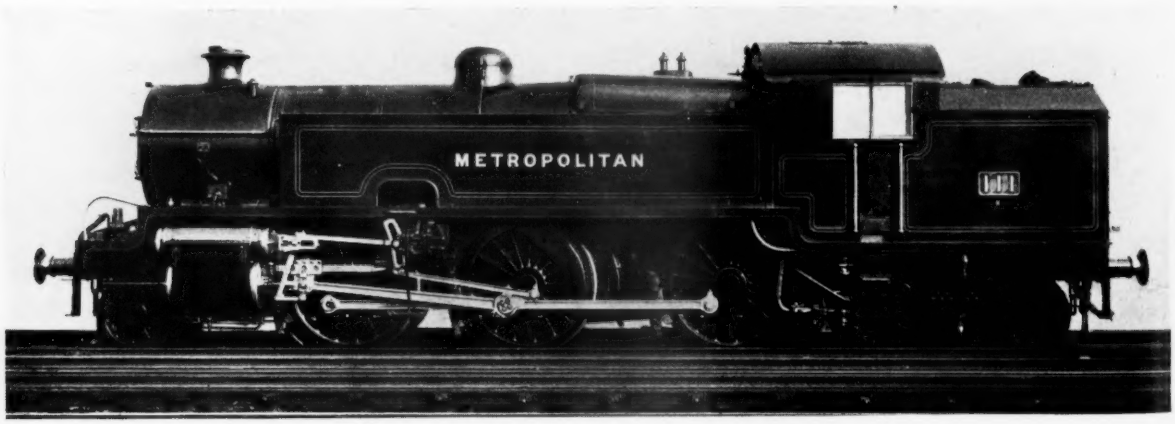
Several railways have developed plans with the object of standardising types and components, but perhaps the Indian State Railways have had more experience in this direction than any other system, or group. Three gauges are to be catered for, namely, the 5 ft. 6 in., the metre, and the 2 ft. 6 in., and a total of 17 types of engines were regarded as sufficient to cover all requirements. Many details became standard for all units, and in some cases two sizes would be sufficient to cover the very wide range and dimensions of engines in service. Standard formulæ and ratios were adopted for many features of design, and the "XB" class 4-6-2 and the "XD" class 2-8-2 shown in the accompanying illustrations are examples of what may be achieved. To meet altered operating conditions in India a new table of standard locomotive types recently has been evolved, and was dealt with in *The Railway Gazette* of December 2, 1949.

Standardisation is sometimes considered to be the deathblow to progress, but this is by no means correct, as many railway engineers are aw e. The lack of a proper system of standardisation will certainly pr ve costly, and few railways seem to h ve realised hitherto the benefits that t ay be achieved by an extensive applica on of the principles. At this stage re er-ence may be made to the way in wh ch the types selected as standards may be built up with reference to each ot er, and an excellent example is the 2-6-0 tender engine illustrated, with its companion unit, the 2-6-4 tank engine. In 1925, the Metropolitan Railways purchased parts for six locomotives of the South Eastern & Chatham Railway "N" class design, and arranged for their construction as 2-6-4 tank engines, using the same boilers (complete), cylinders with valves and valve gear and reversing mechanism, driving and coupled axles, rods, axleboxes, springs and gear, much of the brake gear, and the leading trucks as complete units.

Selection of Types

One of the first steps to be taken by a responsible executive, or board, is to assess the types of engines which will be required to meet existing traffic demands, and the anticipated increased requirements for a reasonable, though, naturally, prescribed period to come, as, in fact, would have to be done in the case of a newly projected line. Reasonable variation of types would be permissible, but the number of these should be kept to the minimum. Such a policy would limit expenditure as concerns the varieties of spares to be kept in store against replacement demands, enable vehicles to be built in bulk at lower prices, and simplify shed maintenance duties.

The major unit in any locomotive is the boiler, regarding this as a complete steam producer, and it should be the aim to reduce the variants of these to

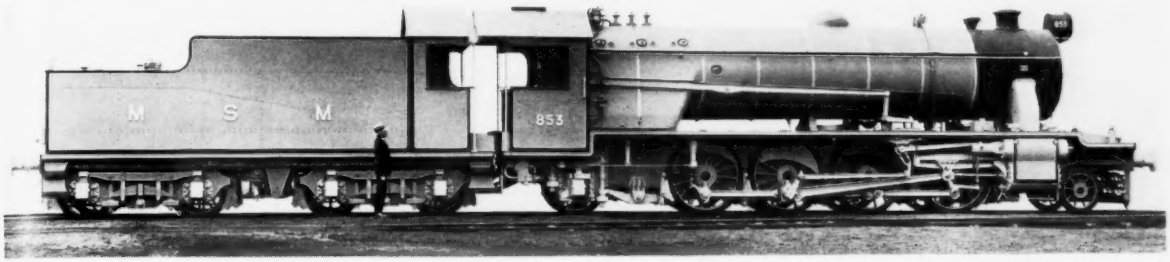


Metropolitan Railway 2-6-4 *side-tank locomotive*

well below the number of locomotive types. The advantages of this procedure are too obvious to require elaboration, and were realised many years ago by Churchward of the Great Western Railway, as well as by his successors.

It may be possible to make the same boiler common for two or more locomotive types, with the exception of the boiler pressure. All boilers would be built for the highest pressure required, the greater cost of the units operating at pressures below that for which they were designed being more than offset by the lower cost of manufacture in greater numbers.

Boiler mountings are another field in which there is scope for economical treatment, items such as safety valves, water gauges, injectors, firedoors, and many other details being suitable parts for supplying in quantities. Many of these can be purchased from first-class makers at appreciably lower prices than the true cost of production in the railway company's shops, and afford a further benefit by releasing men and machines for other work.



Indian State Railways "XD" class 2-8-2 locomotive

Before passing on to other sections, attention might be given to the practice of welding the complete boiler, thus securing a thoroughly tight job at a lower weight and, eventually, a lower all-round cost. In the United States of America railway operators are increasing the use of this technique, and apparently are doing so to advantage.

Cylinders offer a means whereby big economies may be effected, when it is found possible to use one design on several types of engines, possibly the most useful design being that in which the horizontal centre line is truly horizontal. In the majority of cases, the Indian State Railways have no right- and left-hand cylinders.

Using a cylinder for two or more classes of engines effects savings in many departments, as other details become common, and, therefore, are manufactured in larger numbers. These include cylinder and steamchest covers and liners, pistons and rods, with packings, valves, and all subsidiary details such as relief and cylinder cocks.

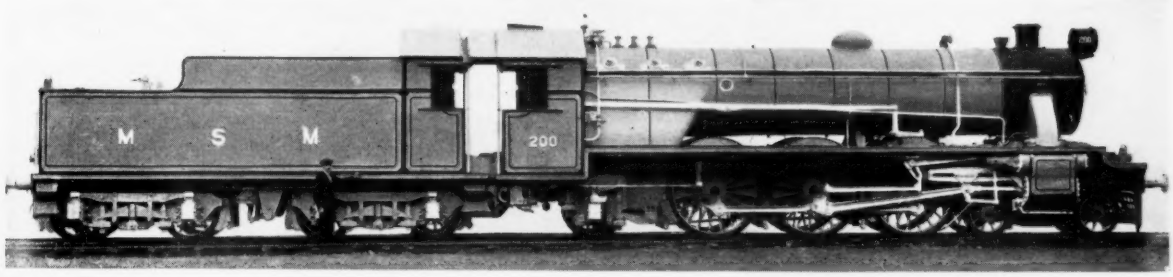
Although a designer requires latitude when producing a new locomotive design, and occasionally the wheel dia. affords an easy way out without altering the boiler pressure, or other factors, when it is possible to standardise tyres—both external dia. and cross section—a useful gain has been made. If it is possible to take the wheel and axle as a unit and make these common for two or more classes, with their axleboxes and guides also, a big step forward has been achieved. Whether, or no, this ideal is attainable, it should be aimed for. If, as in the Metropolitan Railway 2-6-4 engine already referred to, it is possible to go further and treat the drive from cylinder to driving axle as an entity and duplicate the whole, with connecting rods and valve gear included, progress is definitely being made, and big savings are inevitable.

The suspension system may appear to be a small section for consideration, but much may be gained by standardising springs, including all types—laminated, helical, volute and rubber dampeners. Where the spring cannot be used, the section of steel in the leaves or the coils frequently can, and this simplifies stocks as well as repairs. Concerning the coil type of spring, a list of all those in service on the line should be made, with a dimensioned diagram for each type, and it will be found that the stock carried at present can be reduced appreciably on the limited number of engine designs now contemplated.

Brake equipment and operating gear on locomotives should prove a suitable opportunity for those who wish to reduce variation in detail to a minimum. Admittedly, the existing stock of locomotives must run their course, but new designs should require a much shorter list of details and solve many storekeeping problems. A typical unit taken at random might be the driver's ejector brake valve.

As concerns details, one item alone, the brake block, serves as a good case for standardisation, and as stocks become exhausted, fewer types of block should suffice. Steam brake cylinders and brake gear might be reduced to fewer types.

As the chief functions of bogies,



Indian State Railways "XB" class Pacific locomotive

trucks, and radial axles are to carry loads and to traverse curves with safety, the use of existing units for new locomotive designs hinges largely on such features as the load to be carried, the wheel dia. and the side play available. Assuming an existing bogie, or truck, to be generally suitable, modifications can often be made to obtain the required side play.

Cabs, being plate or sheet structures, may possibly lend themselves to standardisation, and the side plates, complete with side windows, arm-rests, and so on, might easily be duplicated for

several classes. Front windows, roof ventilators, handrails, seats and other details might be common to a number of classes.

Tenders already have been standardised to a large extent on some lines by very slight alterations to the coupled wheels and attendant brake block hanger supports and crossbeams, use the complete design. The alteration referred to involved stepping the wheel rim and tyre inwards or outwards, as builders after a particular class has been built. The 4-6-0 metre-gauge tender engines with 4 ft. driving wheels is a case in point. The cylinders, complete with valve gear, cross heads, connecting rods, and all details through to the driv-

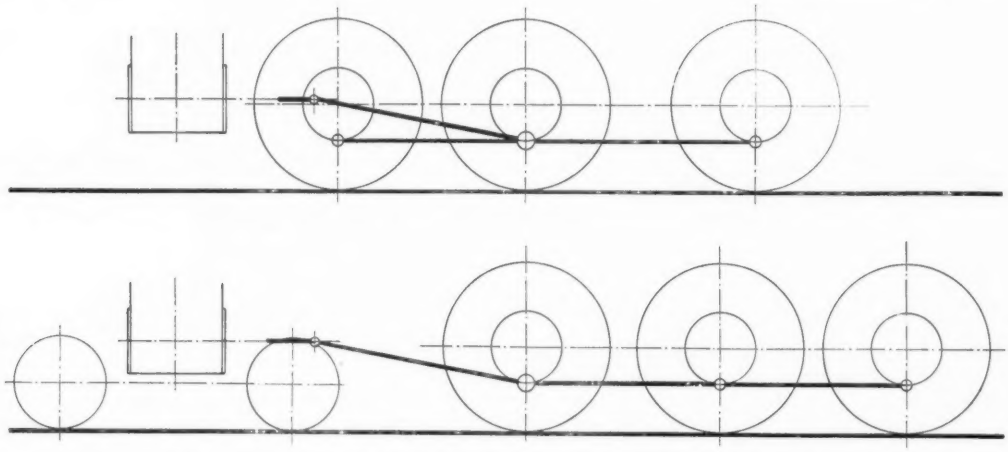


Fig. 1—Evolution of 4-6-0 type locomotive from an 0-6-0 type base

arranging for several locomotive types to operate with the same type of tender; it should be possible to standardise other details such as wheels and axles. If the unit axle load carried by the bearings does happen to be somewhat below the normal for the lighter types of tender, this is a good fault. Fittings such as water-level gauges, water scoops, hand brake pillars and details, might be standard throughout most classes.

Evolution of a 4-6-0 Engine

Most private builders supply foreign customers and frequently have an opportunity for designing first-class engines at lower costs, when these are carried out on standardised lines. An excellent example which comes to mind centres on a design of tank locomotive built some years ago in large numbers for light railways overseas. The engines required were to be of the 4-6-0 type, and the only possible base which the tenderer could find in his records was an 0-6-0 engine. After consideration, the 4-6-0 was evolved as shown in Fig. 1, and this enabled existing patterns, templets, and so on, to be used for the cylinders, connecting rods, valve gear, wheels and axles, axleboxes and guides, spring and brake gear, resulting in a considerable saving. The total number of engines built to the accepted design was well over one hundred, and it was decided to standardise the details as much as possible for this size of engine for various gauges, using jigs on every occasion to reduce manufacturing costs. The boiler also was standardised for many gauges, the only variation made being the width of grate for gauges that permitted this modification.

It was found possible to design the engine visualised in the preceding paragraph for one particular gauge, and by shown by dotted lines in Fig. 2, according to the gauge specified. The same method was used for 30 heavy locomotives built by Armstrong Whitworth in 1925 for the South Australian Govern-

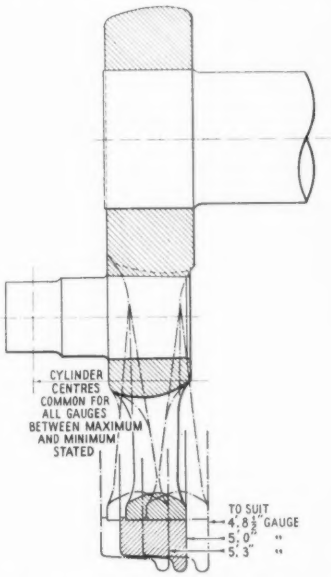


Fig. 2—Simple method of varying the gauge in any engine, a new set of wheel centres only being necessary if the engine is already in service

ment Railways, as these were to be designed for an easy and rapid change of gauge from 5 ft. 3 in. to 4 ft. 8½ in. whenever required.

The Indian State Railways have several classes of locomotive that have proved invaluable to quite a few ing axle have been used in several designs. Spring gear (modified for load when necessary), brake gear, bogie and other components were standardised.

Although, in some cases, the time may be considered premature to examine the possibilities afforded by this approach as concerns diesel-engine vehicles, neglect to do so may land an operator with a host of different vehicles, every one of which has an engine totally dissimilar in detail to the others. In 1944, Mr. H. M. MacIntyre stated, in a paper given before the South American Centre of the Institution of Locomotive Engineers, that all the motive power requirements of the Buenos Ayres Great Southern and Buenos Ayres Western railways could be covered by four sizes of power units, using only two sizes of cylinders, pistons, valves, and so forth. The practice of varying the power output of a complete engine by using the requisite number of cylinders is by no means new, and has been used for road vehicles in Great Britain for some time.

The standardisation of diesel-engine vehicles is not a simple one, and the types eventually chosen may be quite different from those in use today in this country. American engineers favour the double-bogie unit for shunting, as well as for main-line services, and it is interesting to note that Mr. Bulleid chose this type for his "Leader" class steam locomotive, which is designed to be capable of handling goods, or fast passenger trains.

PACKAGING GLOSSARY.—A British Standards Institution committee has undertaken the task of compiling a glossary of packaging terms. Any organisations considering nomenclature in relation to packaging are invited by the B.S.I. to collaborate in the work.

RAILWAY NEWS SECTION

PERSONAL

BRITISH RAILWAYS APPOINTMENTS

The Railway Executive announces that, with the concurrence of the British Transport Commission, the following appointments have been made:—

Mr. C. H. Brazier, Staff Officer (Operating Staff), Railway Executive Headquarters, London, to be Regional Staff Officer, Scottish Region.

Mr. G. E. Curtis, District Goods Manager, Wolverhampton, London Midland Region, to be Executive Officer (Goods), Railway Executive Headquarters, London.

We regret to record the death on March 21, at the age of 71, of Mr. Douglas Hugh Keelan, sometime Deputy Chief Commercial Manager, East Indian Railway.

Mr. G. H. Pescud, hitherto General Superintendent of Communications at Winnipeg, has been appointed Assistant General Manager of Communications for the Canadian Pacific Railway system.

Three senior officers of the Traffic Commission for Greater Stockholm, Mr. Ake Nerell (Chairman), Mr. Sandstrom (Member) and Mr. Stig Samuelson (Secretary), recently completed a six-day study of the London Underground system.

Mr. H. R. Caulfield-Giles, who was recently elected Chairman of the Traders' Traffic Conference for his tenth successive year, has been appointed a member of the Transport Committee of the Association of British Chambers of Commerce.

The Express Carriers Group of the Road Haulage Association has re-appointed Mr. R. H. Farmer as Chairman and Mr. R. B. Brittain as Vice-Chairman for the ensuing year. Mr. C. W. H. Sparrow has been re-appointed Chairman of the R. H. A. Tipping Vehicles Group, of which there are three Vice-Chairmen: Messrs. F. C. Harfoot, R. N. Ingram, and C. A. Nichols.

INSTITUTION OF LOCOMOTIVE ENGINEERS

The council of the Institution of Locomotive Engineers for the 1950-51 session will be composed as follows:—

President: Mr. R. A. Riddles; Vice-Presidents: Mr. J. F. B. Vidal (to retire May 31, 1953), and Messrs. R. C. Bond, C. M. Cock, and K. J. Cook (to remain in office for another year or longer).

Members of Council: Messrs. J. F. Alcock, J. F. Harrison, Ranald J. Harvey, M. S. Hatchell, H. Holcroft, W. F. McDermid, W. L. Watson, E. A. Robinson, E. Pugson, R. A. Smeddle (to retire May 31, 1952); and Messrs. R. Arbuthnott, D. C. Brown, A. Campbell, E. S. Cox, I. C. Forsyth, G. C. Gold, W. G. Hornett, L. J. Le Clair, J. H. P. Lloyd, and W. H. W. Maass (to remain in office for another year or longer).

Mr. R. M. T. Richards, O.B.E., M.Inst.T., Deputy Chief Regional Officer, Southern Region, British Railways, who is retiring shortly, was born in 1890. He joined the South Eastern & Chatham Railway in 1908, and later was appointed Assistant to the Eastern District Superintendent. In April, 1915, he joined the Railway Operating Division, R.E., in France, and he was demobilised in 1919. He rejoined the S.E.C.R., and was appointed Assistant London District Traffic Superintendent; on the amalgamation he was transferred to Waterloo as Assistant Divisional Superintendent, Southern Railway. In 1930 Mr. Richards was promoted Divisional Superintendent, London (West) Division, where he remained until 1933. In that year he was selected to fill the newly-formed position of Development Officer to the General Manager. While so engaged he undertook an extensive mission to South Africa in 1936, to perfect the relationship between the producers of that country and the Southern Railway. In July, 1937, he became Assistant Traffic Manager, and he visited the U.S.A. and Canada to study port and transport conditions. On January 1, 1940, Mr. Richards was appointed Traffic Manager, during the period in which Sir Eustace Missenden held the position of General Manager in the absence of Mr. Gilbert Szlumper; he was confirmed in the permanent appointment of Traffic Manager in 1942, after Sir Eustace Missenden had been appointed substantive General Manager. Mr. Richards was appointed Deputy Chief Regional Officer, Southern Region, as from January 1, 1948. During the temporary absence of Mr. John Elliot in Australia last year, Mr. Richards served as Acting Chief Regional Officer. He was made an O.B.E., in the New Year Honours, 1943, and is a Chevalier dans l'Ordre de Leopold (Belgium). He is also an Officer of the Order of St. John of Jerusalem.

Mr. R. M. T. Richards
Deputy Chief Regional Officer, Southern Region, British Railways, 1948-50

Mr. R. M. Robson has been appointed Chief Engineer of the D.P. Battery Co. Ltd., in succession to Mr. H. G. Brown, whose services will remain available to the company in an advisory capacity.

We regret to record the death on March 20 of Mr. Reginald Page Wilson, C.B.E., M.I.C.E., a leading consulting engineer in the electrical field. He was associated with the electrification of the Melbourne suburban lines of the Victorian Government Railways.

Mr. F. Rayer, formerly Chief Engineer of Brush Coachwork Limited, and the Metropolitan-Cammell Carriage & Wagon Co. Ltd., has been appointed Consulting Engineer on all-metal passenger bus construction to the Tube Investments subsidiary, Metal Sections Limited, of Oldbury, Birmingham.

The Canadian Pacific Railway announces the following European Passenger Department changes:—Mr. R. H. Hobern, Passenger Agent, Bristol, to be Assistant General Agent, Passenger Department, London; Mr. L. Callaghan moves from London to become Passenger Agent, Manchester; Mr. G. W. Murrell, Passenger Agent, Birmingham, is transferred to Bristol in the same capacity; Mr. Herbert Jones, of Liverpool, is appointed Passenger Agent, Birmingham.

Mr. J. R. Ferguson, Expenditure Accountant, East African Railways & Harbours, has been appointed Assistant Chief Accountant.

The London Transport Executive announces the appointments as Principal Executive Assistant, Signal Engineer's Office, of Mr. H. Firminger and Mr. W. H. Challis.

The Road Haulage Executive has decided to set up an insurance panel to advise it about problems arising from the inheritance of differing insurance arrangements for over 2,000 road haulage undertakings. After consultation with the Corporation of Insurance Brokers and Lloyd's Insurance Brokers' Association, it has appointed Sir Philip D'Ambrumenil as Chairman, and Mr. V. P. Gentry, Mr. D. Willis, Mr. M. F. Shepherd, and Mr. Alex C. Thompson as members; Mr. C. E. Ovington will act as Secretary to the panel.

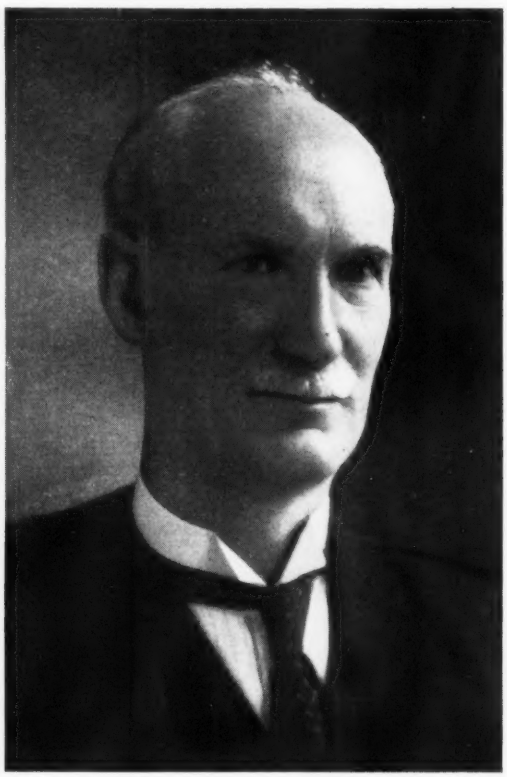
We regret to record the recent death of Dr. Angus Buchanan, M.C., M.B., Ch.B. (Edin.), who was in practice at Crewe for many years and was well known to members of the staffs of the L.N.W.R. and later the L.M.S.R. During the whole of his practice there he was closely associated with the work of the L.N.W.R. Accident Hospital attached to Crewe Works.

We regret to record the death on March 21, the eve of his 81st birthday, of Mr. John Quirey, C.B.E., M.Inst.T., who was a Vice-President of the London Midland & Scottish Railway from 1927 to 1931, and afterwards a permanent Member of the Railway Rates Tribunal. Before his appointment as a Member of the Tribunal, Mr. Quirey had had perhaps a longer experience of its work than almost any other railway officer, by reason of his constant attendance as a witness and his work in the preparation of cases. He entered the service of the Belfast & Northern Counties Railway in the Audit Office in 1882, and in 1891 was transferred to the Accountant's Office. In 1914 he was appointed Accountant of what was then the Midland Railway Company's Northern Counties Section (Ireland). In 1917 he was made Assistant Accountant of the Midland Railway, and in 1920 he was appointed Accountant. On the formation of the L.M.S.R. in 1923 Mr. Quirey became Joint Accountant of that company, and, in the next year, Accountant-General. In 1927 he was appointed Vice-President for Accounting & Service Departments, and in 1930 was made Vice-President, Operating & Commercial, from which position he retired in 1931, when he was appointed a Member of the Railway Rates Tribunal. He retired from the Tribunal in 1943. Mr. Quirey was made a C.B.E. in the King's Birthday Honours, 1928.

Mr. A. E. R. Slack has been appointed Sales Manager to Deans & Son (Yorkshire) Ltd.

Khan Bahadur Mian Mohammad Nizam-ud-Din, Director-General of Railways, Government of Pakistan, whose death, at the age of 57, we recorded recently, graduated from the Punjab University, and passed the civil engineering examination of the Thomason Engineering College, Roorkee, where, besides other distinctions, he won the Thomason Memorial Gold Medal for the best engineering design. He joined the Railway Service of Engineers in 1915, and was posted to the North Western Railway. He worked on surveys and construction of many lines in the Punjab, North West Frontier Province, Baluchistan, East Iran and Sind, and in recognition of his able construction work the Government of India awarded him a cash honorarium. He was later appointed Chief Government Inspector, Indian Railways, but soon afterwards was seconded to the Hyderabad Government, where he worked as General Manager, and Director, Railway Location & Construction, Nizam's State Railway. On behalf of the Government of India, and later the Hyderabad Government, he functioned as a Director on the boards of several railways. He was appointed Director-General, Pakistan Railway on August 1, 1948, in which capacity he served until the time of his death.

Mr. W. Davin, T.D., has retired from the service of British Railways at North Wall, Dublin. For a number of years he was Railway Controller at the North Wall Station. In this connection, he was recently made the recipient of a presentation from his colleagues in the service of the British Railways (London Midland Region). The presentation, consisting of a silver tea service, with salver inscribed,



The late Mr. John Quirey

Vice-President, L.M.S.R., 1927-31 ; Permanent Member, Railway Rates Tribunal, 1931-43

The late Khan Bahadur M. Nizam- ud-Din

Director-General of Railways, Government of Pakistan, 1948-50

was made by Mr. A. J. Broughton, Irish Traffic Manager, London Midland Region, who paid tribute to Mr. Davin's services. Mr. Davin is a prominent member of the Railway Clerks' Association, on the national executive committee of which he served from 1916-18. He has been a Member of Dail Eireann since its formation, and has spoken on many occasions on transport subjects, particularly in connection with railway affairs.

The machine tool manufacturers for whom Morrison, Marshall & Hill act as London office and export division gave a cocktail party at l'Institut Belge, Belgrave Square, S.W.1, on March 21, to meet Mr. P. L. Crabtree (D. Mitchell & Co. Ltd.), Mr. Donald Rushworth (Rushworth & Company), Mr. J. W. Rushworth (Graham & Normanton Limited), and Mr. Harry Shaw (Midland Saw & Tool Co. Ltd.). Among those present were home trade distributors and representatives of overseas railways and their consulting engineers.

Argentine National Railway Directorate

As already recorded, the administration of the Argentine National Railways has been entrusted to a new autonomous body under the ægis of the Ministry of Transport—the National Railway Directorate, the members of which body have now been designated as follow: President, Colonel José Roberto Zubieta; Vice-President, Mr. Pablo E. C. López; Members, Messrs. Pedro Pablo Martín, Humberto C. Carutti, Atilio Cappa, Alberto D. Sívori, Juan José Vistalli, Antonio López, Antonio Taccone and Luis Rodríguez Irigoyen.

Colonel Zubieta, until taking up his new position, was General Manager of the General Roca (former B.A. Great Southern) Railway; and Mr. Pablo López is, and will remain, President of the Unión Ferroviaria. Messrs. Pedro Martín and Rodríguez Irigoyen have long been connected with railway matters under the Ministry of Transport, and previously under the Ministry of Public Works and the old National Railway Board. Mr. Carutti relinquishes his post as General Manager of the General Belgrano Railway (former Argentine State system). Mr. Cappa was at one time Principal Engineer (Civil & Mechanical) of the Argentine State Railways, retiring some years ago. Mr. Sívori represents the enginemen's union, La Fraternidad, and Mr. Taccone the Unión Ferroviaria. Mr. Vistalli was appointed Chief of the Argentine Purchasing Commission in London two years ago, but subsequently resigned.

Mr. Carmelo Adolfo Pizzorno, who was recently appointed General Manager of the General Mitre (former Central Argentine) Railway, has now been appointed General Manager of the General Belgrano Railway (former Argentine State system), in place of Mr. Humberto C. Carutti, who has become a member of the National Railway Directorate. A portrait and biography of Mr. Pizzorno appeared in our March 24 issue. Mr. Ernesto Iglesias has been appointed General Manager of the General Mitre Railway. Mr. Iglesias, who was previously Chief of the Automotive Transport Division of the Argentine Ministry of Transport, is a brother of Mr. Roberto Iglesias, who left the General Managership of the General Mitre Railway to become Under-Secretary for Merchant Marine in the Ministry of Transport.

Mr. J. E. Wood, District Motive Power Superintendent, Newport, Western Region, British Railways, whose death we recorded last week, had only been transferred to Newport from the London Midland Region on February 1 last. He joined the L.N.W.R. in 1915, and in 1928 was appointed Assistant District Locomotive Superintendent, Blackpool, L.M.S.R. He was made Assistant to the Divisional Superintendent of Operation, Manchester, in 1934, and in the next year became Office Assistant to the Divisional Superintendent of Motive Power, Derby. He thereafter received appointments as District Locomotive Superintendent at Plaistow (1936), Nottingham (1940), Derby (1941), Kentish Town (1943), and Leeds (1946). It was the last-named post which he had vacated on his transfer to Newport. The funeral of Mr. Wood took place at Pontypridd Crematorium on March 21. Canon C. G. R. Lewis, Vicar of All Saints', Newport, also held a private service at Newport. Those present at the funeral, in addition to family mourners, included the following Western Region officers and others:—

Messrs. W. N. Pellow, Motive Power Superintendent (also representing Colonel H. Ruddgard, Chief Officer (Motive Power), Railway Executive); H. H. Swift, South Wales Area Officer (also representing Mr. K. W. C. Grand, Chief Regional Officer); S. E. Tyrwhitt, District Motive Power Superintendent, Cardiff; H. N. S. Edwards, District Motive Power Superintendent, Bristol; J. Colclough, Staff Assistant to Motive Power Superintendent; W. R. Stevens, District Operating Superintendent, Newport; S. Stevens, Divisional Engineer, Newport; N. D. Jenkins, District Commercial Superintendent, Newport; Chief Inspector J. H. Fowk, London Midland Region (also representing Mr. O. E. Kinsman, Divisional Motive Power Superintendent, Derby); Messrs. H. R. Cox, Assistant District Motive Power Superintendent, Newport; E. G. Pickersgill, Assistant District Motive Power Superintendent, Leeds, London Midland Region; K. F. Hall, District Outdoor Carriage & Wagon Engineer, Cardiff; R. J. Slade, Assistant District Commercial Superintendent, Cardiff (also representing Mr. C. E. Shaw, District Commercial Superintendent); A. J. Robinson, Assistant District Operating Superintendent, Cardiff (also representing Mr. D. M. Turnbull, District Operating Superintendent); A. Rees-Jones (also representing Mr. H. G. Lakeman, Divisional Engineer, Cardiff); H. B. John (also representing Mr. H. T. Rendall, District Motive Power Superintendent, Leeds, London Midland Region.

Retired Railwaymen's Reunion Dinner

The serving railway staff in the Scunthorpe district have regularly for many years entertained their retired colleagues annually. The function has taken various forms in the past, and this year a dinner was held at the Royal Hotel, Scunthorpe, with Mr. A. L. Brears, goods guard, officiating as Chairman. The speakers were Lord Quibell, Mr. C. K. Bird, Chief Regional Officer, Eastern Region; Mr. E. W. Rostern, Operating Superintendent, Eastern & North Eastern Regions; Mr. L. P. Parker, Motive Power Superintendent, Eastern Region; Mr. W. E. Atkinson, Locomotive Shedmaster, Frodingham; Mr. George Mawson, retired Stationmaster; Miss Audrey Marshall, of the Yardmaster's Office, Frodingham; and Alderman E. Pittwood, Mayor of Scunthorpe (a former railwayman). Eastern Region officers also present included Messrs. H. C. Johnson, Divisional Operating Superintendent (Western); E. J. Stephens, District Operating Superintendent, Doncaster; H. W. Graham, District Manager, Lincoln; D. C. Stuart, Assistant District Motive Power Superintendent, Doncaster; W. O. Reynolds, Assistant District Operating Superintendent, Doncaster; J. A. Aitken, Goods Agent, Scunthorpe; G. F. Franks, Stationmaster, Scunthorpe; and R. J. Selley, Yardmaster, Frodingham. The total number attending was 185, which included 78 retired railwaymen and their wives.

Mr. E. S. Waddington, of the Industrial Department of Philips Electrical Limited, has been appointed British Representative of the International Institute of Welding for Commission No. 8—Hygiene & Safety.

We regret to record the death in Buenos Aires on March 10 of Mr. George Bernard Wells, who retired on February 28 from the position of District Storekeeper at Evita, General Mitre (former Central Argentine) Railway.

Railway and Hotels Executives Entertain U.S. Journalists

The Railway Executive and the Hotels Executive held a cocktail party on Wednesday, March 22, at the Euston Hotel, London, N.W.1, for sixteen American editors and sports writers on a ten-day sightseeing visit to this country sponsored by the Travel Association. The joint hosts were Sir Eustace Missenden, Chairman of the Railway Executive, and Lord Inman, Chairman of the Hotels Executive, supported by Members and Chief Officers of the two Executives, and Chief Regional Officers and other officers of British Railways. The guests included leading representatives of the British Tourist & Holidays Board, the Travel Association, and of the transport, hotel, and catering press and the U.S. press in London. The tour, a considerable portion of which has been made under the auspices of the British Railways and the Hotels Executive ended on Sunday. It included visits to places in London and the Home Counties, the North of England, Scotland, the Lake District, and terminated with a two-day visit to Merseyside during which the visitors saw the Grand National.

Railway and Hotels Executives Entertain U.S. Journalists

Sir Eustace Missenden, Chairman of the Railway Executive, Lord Inman, Chairman of the Hotels Executive, and Lord Hacking, Chairman of the Travel Association, with American journalists at the cocktail party held at the Euston Hotel recently (see paragraph above)

Sir Cyril Hurcomb on Railway Efficiency, Productivity, Costs, and Economies

Better loadings, and higher rate of freight movement, but expenses absorb savings

This week Sir Cyril Hurcomb, Chairman of the British Transport Commission, has been in the Darlington and Manchester areas. On Tuesday he spoke at a Chamber of Commerce luncheon at Darlington, and on Wednesday he read a paper on integrated transport to the Manchester Statistical Society.

Another reason for the visit to Manchester, however, was to inspect, among other railway premises, Victoria & Exchange Station, Newton Heath Motive Power Depot, Gorton Locomotive Works, and Liverpool Road Goods Depot.

During his tour Sir Cyril Hurcomb was accompanied by Mr. J. H. Brebner, Chief Public Relations & Publicity Officer, B.T.C., and Mr. John Elliot, Chief Regional Officer, London Midland Region, British Railways. Sir Cyril Hurcomb lunched at Manchester with railway and road haulage officers.

Increased Productivity

Speaking at Darlington on March 28, Sir Cyril Hurcomb said there had been various complaints that the railways had failed to increase their productivity. There was no justification for these complaints. The average wagon-load for all three main classes of traffic had increased by 29 per cent. for merchandise, 7 per cent. for minerals, and 5 per cent. for coal and coke, while the average improvement for all classes was 7 per cent. The average train-load in tons had increased by 25 per cent. The estimated net ton-miles had shown an increase in 1948 over 1938 of nearly 5,000 million ton-miles. This increase of 29 per cent. showed the much larger volume of work performed at the end as compared with the beginning of the decade.

The best measure of performance by railway operators was the number of net ton-miles secured per total engine-hour. That figure had gone up from 461 in 1938 to 542 in 1948, which was an increase of 18 per cent., and the figure for 1949 was 559, an improvement of no less than 21 per cent. over pre-war. The rate of movement, as shown by the wagon-miles and the train-miles worked per total engine-hour, improved in 1948 over 1947, although it was still below pre-war. The railways were doing more work for a given effort and improving the rate of movement.

Then there was the factor of wagon size. He had always been an advocate of large-capacity wagons, and 20 years ago was a member of a committee over which Sir Arthur Duckham presided which then hoped that it would be possible to make the 20-ton wagon standard. They had, however, had to be content with moving first to 12-ton and then towards the 16-ton wagon, which was the basis of most current renewals, apart from special types.

Appreciable increase in wagon size would necessitate heavy capital expenditure at a time when capital investment was still rigidly curtailed. At the same time they did not overlook the advantages of introducing high-capacity wagons for special industries and for use between special points where that could economically be done.

Another point in considering the costs and efficiency of rail transport was that the average weight per consignment of general merchandise had fallen appreciably. British traders had become accustomed to maintain relatively small stocks and to expect rapid delivery. This brought a great deal of traffic down to a retail basis and militated against any policy of holding wagons for ideal loads or detaining wagons until full train loads could be brought together. In this respect the railways showed themselves commercially minded and strove to meet requirements, with the result that at the end of 1949, 41 per cent. of wagons received a one-day transit, 45 per cent. a transit of two or three days, and only 14 per cent. more than that.

Reduction in Manpower

Indices of efficiency, though real and encouraging, were only part of the picture. It might be asked what was being done to reduce the number of persons employed on the railways. The increased labour force reflected the shorter working week, increased holidays, and other factors. For example, additional staff requirements resulted from the overhaul of arrears of maintenance, for which there was no corresponding need pre-war. This meant extra manpower and additional overtime. In fact the Railway Executive had reduced its labour force materially. If the level of October, 1949, was compared with that prevailing in the corresponding month of the previous year, when a systematic review of the staff at all levels began, there was a reduction of 27,000.

The total expenditure of British Railways in 1949, including provision for depreciation or renewals but excluding sums spent on abnormal maintenance, amounted to £312 million, only £1 million more than in 1948, though there had been many increases in expenses over which they had no control.

There were many important economies which did not reflect themselves immediately in current costs of working. There were many economies also which had been offset by growths of expenditure over which they had no control. New concessions or awards to staff arising in 1949 for the first time would cost on the railways alone in a full year £1¼ million, while awards to the staff of London Transport and other Executives represented an additional continuing annual charge of almost as much, making a total of £2½ million.

Economies Effected

The reorganisation of the Scottish Region was estimated to yield an approximate annual economy of £1 million. Nearly 40 marshalling yards had been closed or partially closed, with consequent saving in engine-hours, evaluated at £250,000 annually, while the amounts paid out for damage and loss of goods, including pilferage, had been reduced from £4,078,872 to £2,852,379 between 1948 and 1949. Much has been accomplished since 1947 in the more efficient use of available cartage equipment and in the turn-round of wagons as well as in the percentage of rolling stock under or awaiting repairs. Revised methods of organisation and control and mechanisation should eventually represent an annual saving of some £3 million.

The policy of closing little used stations and branch lines serving districts which they could equally well or more economically serve by road was being steadily pursued. Although no spectacular economy could be expected, the B.T.C. had approved in the last two years proposals which would yield in the aggregate an annual saving of about £200,000 a year. About a quarter was represented by the closing of stations. Much larger economies would eventually accrue when they had been able to bring the permanent way, structures, and rolling stock of British Railways out of the state in which they had been left by the war, and by its aftermath of restrictions on capital investment.

In the total of £312 million of railway expenditure in 1949, about £112 million represented repairs, renewals, and depreciation, and the greater part of the remaining £200 million was spent on operating and other traffic costs.

Eliminating Fare Discrepancies

It was sometimes asserted that the B.T.C. had no intention of reducing rail fares and that its only aim was to increase road fares to existing rail levels. There was no justification for that assertion and it certainly did not represent the policy of the B.T.C. What he had said on many occasions was that the existing discrepancies between road and rail fares were in certain cases excessive. The root of the difficulty was that the level of charges lagged too far behind the general price level.

They had also inherited a legacy of unremunerative undertakings in many of the canals. During the war it was never possible to get the canal carryings up much above 1,000,000 tons a month. Traffics moving over the inland waterways in 1949 were at the rate of about 940,000 tons a month and it was doubtful whether any great expansion in total could be looked for. What they had to do was to utilise more fully those waterways which were really useful from the point of view of navigation and to free themselves from the expense of maintaining waterways which had ceased to be valuable any longer as instruments of transport. As with branch railway lines, they could not afford to carry the burden of maintaining all the facilities created in the past two centuries for the sake of a very limited use by a small fraction of the population and at the same time develop new and needed services.

He was glad to be able to refer to a general improvement of the order of 10 per cent. in the turn-round of vessels at ports controlled by the B.T.C. and to note that in the case of pitprop and sawnwood cargoes at the Hartlepools the saving had been 30 per cent. This improvement had been achieved by teamwork in which all played an essential part, and it was confidently hoped that further savings would be effected in the future by modernising port facilities and increasing mechanisation.

It was quite wrong to think of the railways as having to be carried on the backs of other forms of transport. What they had to do by integration was to ensure that the railways were allowed to carry what they were best fitted to carry. And for traffics for which the railways deserved patronage they must be well patronised

in order to secure the most economical loading and reasonable charges. They heard a lot about the law of diminishing returns and the need to reduce rail fares. There was equally a law of increasing returns. The railways would only perform their full and rightful function in the national economy when the services they offered could be correctly integrated with other forms of transport. The country had actually been moving inevitably towards the integration of transport for years, and they now had the means of carrying out a thorough and practicable plan which would in the end be to the advantage of all traders and industry.

Road Transport Progress

Many of the points raised by Sir Cyril Hurcomb in his paper presented at Manchester had been dealt with in his speech at Darlington the day before. Speaking of the road haulage activities of the B.T.C., he said that only about 200 firms subject to compulsory acquisition remained to be transferred during the next two months.

Businesses taken over on the requirement of the operators themselves, continued Sir Cyril Hurcomb, might amount to 300, making a total of about 2,600 road haulage undertakings taken over, under one process or another, as a result of the provisions of Part III of the Act. They included businesses of varying character and size. The identity of most of them had already been merged in about 200 groups, and their purchase price represented a sum of the order of £55 million so far.

The task of negotiation and reorganisation in road haulage had been a heavy one, and meanwhile it had been necessary to look after the business taken over. There need be no surprise that they had not been able to press forward faster with arrangements for integration of road haulage with other branches of the B.T.C. activities.

In road passenger transport the B.T.C. was fortunate in taking over from the London Passenger Transport Board a highly efficient, though heavily strained, equipment, and an experienced staff, and by an easy transition the Board became the London Transport Executive.

Outside London, however, the position was different. The Commission, as successors to the railway companies, held a substantial investment in many of the larger operating companies, but that gave them no control, and one of the early steps, therefore, was to acquire outright by negotiation the operating companies of the Tilling and Scottish Motor Traction groups respectively. As a result of these transactions and the more recent purchases of the Red & White group, the road passenger fleet now numbered 13,500 vehicles. It was estimated that the total investment in these undertakings was about £90 million.

Through their various undertakings the Commission received no less than £215 million in passenger fares, or nearly 63 per cent. of the total gross receipts of all public passenger undertakings throughout the country. If railways were excluded, then, out of a total of £205 million from public road passenger services, including London, the B.T.C. received £78 million, or about 38 per cent. Their interest was, in fact, greater than this, since he had not brought into his calculation any proportion of the £32 million of the gross earnings of other companies in which they were large shareholders. Nor had he included the receipts of road companies acquired since 1948.

Sir Cyril Hurcomb said that the acquisition of these extensive road passenger services, the management of which they had not centralised, must assist the joint and better use of these facilities and the integration of rail and road transport. Where, for example, the case for maintaining some branch railway line for passenger traffic could no longer be made out, they would often be able to provide out of their own resources whatever alternative service by road the traffic might require.

Competition

It was not always realised how far from a monopoly the national system of public transport would be, even when the provisions of the Act had been fully carried out. They were open to competition by sea and by air. On land, while they monopolised rail transport and had certain rights in regard to carriage by inland waterway, they had to compete with the private car, with the passenger coach, with the independent haulier who operated within 25 miles of his base, and with the growing number of vehicles used by individual traders or firms for the carriage of goods for, and in connection with, any trade or business carried on by them.

Whatever the requirements of its accountability to Parliament, the B.T.C. must in any case so organise its undertaking as to form a self-contained commercial corporation responsible for paying its way and delegating the day-to-day administration of its various services to efficient and experienced managers. As their plans proceeded they would no doubt learn a great deal as to the degree to which different functions could best be delegated and decentralised or given central direction.

There was no pre-ordained pattern and little previous experience in this field. For the present, the Commission had delegated wide powers to the six executive bodies covering day-to-day operations and the care of assets, but it maintained a close oversight over the execution of these powers, as it must if the policy followed was to be coherent and continuous, and if it was to keep a regular check on the efficient working of the various parts of the undertaking.

Charges Scheme

In the draft principles for the new Charges Scheme recently issued it would seem that the B.T.C. was seeking to relate the charges for transporting small consignments more closely to the costs of handling that type of traffic. They did not imagine or expect that long-established methods of commercial and industrial operation could be altered in a short period. Practices being as they were, it would be the opposite of good railway working to attempt always to detain wagons until they were full to capacity or until a full train-load could be brought together.

The role of the statistician and efficiency-auditor lay, an the one hand, in studying each individual facet of an operation, and, on the other hand, in assisting management to ensure that the numerous interesting factors resulted in an overall improvement in the efficiency of operation, such as, in the net ton-miles per engine hour. The improvement here was 18 per cent. over the decade.

Even this important measurement failed to take account of certain aspects of the quality of service rendered to the community. Moreover, of the factors which affected the overall results of a transport undertaking, those which reflected the degree of utilisation of the service offered, must be distinguished from those that were measures of service provided, and from those which reflected changes in the nature or flow of traffics.

Meanwhile, the unceasing search for new economies and fresh revenue, in order that they might begin to pay their way, had to be reconciled with demands for additional services which the public did not hesitate to require of a nationalised undertaking. They were subject to constant pressures from various sections of the public for additional facilities ranging from new tubes costing millions to minor adjustments of services, and from many classes of the community who sought special privileges on alleged social grounds in the shape of travel at cheap, and what would in effect be subsidised, rates.

Their policy had been to view such requests with such sympathy as commercial considerations allowed, but in principle to hold that social services should be paid for not by transport, which meant other users of transport, but by the authority responsible for the social service concerned—the educational authorities, if it be cheap travel for schoolchildren or students, the health authority if it be concession to the incapacitated and so on. The demand for a subsidy was usually a demand from those who wanted service below cost to help, not transport, but themselves.

Principles of Charging

Internally, any public service operating over a wide area was bound to conduct parts of its business at a lower level of profitability than it could secure from others, and on some parts perhaps to make a loss. That must ensue from any scheme which was by statute required to provide for the needs of the public, agriculture, commerce, and industry in all parts of the country. The Commission could not, and did not, say that it should not provide any service which was not fully remunerative. On the contrary, it recognised that there were many areas of the country and sections of the population which could not be left unserved, and from which they must be content to ask less than a full return.

Nevertheless, they were not in a position to frame the charging policy on the assumption that they were perfect, or even imperfect, monopolists. And here was a real difficulty they would have to face in the Charges Schemes. So long as railways had a virtual monopoly of long-distance traffic and of fast traffic over any distance, there was no difficulty in applying a theory of rate fixing which adopted a classification of commodities largely based on value, while recognising differences in length of haul by an appropriate taper in the rates. It was enough to apply averages and possible to generalise rates.

If there was to be any hope of a Charges Scheme satisfactory to the public and themselves they must start fair and not with too many millions of deficiency hung like millstones round their neck. It was disappointing to have to add to the amounts which they would need to raise in future years many millions for the purpose of recouping past deficiencies.

The British Transport Commission entertained no doubt that in due course, when it had been able to accomplish the main duties laid on it by the Act, and had put into effect the various measures on which it and the Executives were now engaged, the national transport system would be able to pay its way. Provided its charges had once been brought up to date, they were in no sense defeatist on the score of the railways making a sufficient contribution.

Questions in Parliament

Reconstruction of a Selby Bridge

Colonel L. Ropner (Barkston Ash—C.) on March 13 asked the Minister of Transport if he would make a statement on the progress in the carrying out of the work of reconstruction on Park Street Bridge, Selby.

Mr. Alfred Barnes, in a written answer, stated: I have approved a scheme for the reconstruction of this bridge and am negotiating an agreement with the Railway Executive for carrying out the work. It will be put in hand as soon as possible after the agreement is completed.

Losses of Stores on Railway

Brigadier Terence Clarke (Portsmouth West—C.) on March 20 asked the Minister of Supply what was the value of Government stores, the property of his department, which had been lost in transit on the railways each year since the railways had been nationalised.

Mr. George Strauss (Minister of Supply), in a written answer, stated: In 1948, £44,144; in 1949, £21,346.

Road Haulage Compensation

Mr. Martin Lindsay (Solihull—C.) on March 20 asked the Minister of Transport what, up to the most recent convenient date, was the total sum paid by way of compensation to "A" and "B" licence holders; what sum remained outstanding; and by what date it was hoped to complete payment.

Mr. Alfred Barnes, in a written answer, stated: The British Transport Commission has informed me that up to February 28 last sums totalling £13,685,175 had been paid to road haulage undertakings compulsorily acquired by the British Transport Commission. There was, on that date, a balance of £4,270,000 outstanding in respect of provisional ascertainments of compensation recently computed on the basis of information supplied by transferrors.

Some £2,500,000 of this will be paid when the next issue of Transport Stock is made on April 1. The remainder will be settled as soon as the necessary legal formalities connected with the transfer of assets have been completed. Completion of further provisional ascertainments of compensation depends on the rendering by transferors of accounts and other essential information. The date by which the completion of all payments may be expected will depend largely on the speed with which such necessary information is furnished and on the number of the cases to be dealt with by the Transport Arbitration Tribunal.

Overseas Visitors to Electric Traction Convention

The four-day convention on Electric Railway Traction held in London last week under the auspices of the Institution of Electrical Engineers, which is the subject of further editorial comment elsewhere in this issue, was attended by a number of railway and other electrical engineers from countries with a considerable electrified railway mileage, or where electrification projects are, or have been, under examination.

The overseas visitors attending this convention were:—

Belgium: Messrs. Baeyens, Principal Engineer; E. J. Derijckere, Chief Electrical & Signal Engineer; and J. Musyck, engineer in charge of co-ordination of electrification projects, Belgian National Railways; Manuel Dorfman, Member of the Société Royale Belge des Ingénieurs et des Industriels.

Ceylon: Mr. B. D. Rampala, Chief Mechanical Engineer, Ceylon Government Railway.

Denmark: Messrs. H. Fogtmann, Engineer, Danish State Railways; Willy Willendrup, Titan Limited, Copenhagen.

France: Messrs. Brun, Division des Etudes de Traction à Moteurs Thermiques, Crepet, Ingénieur du Service, Garreau, Chief of Electric Traction Division, Gastine, Division des Etudes de Traction Electrique, de Giacomini, Electrical Engineer, and J. G. Walter, Chief of the Signal & Telecommunication Division, French National Railways; H. Parodi, Consulting Engineer, French National Railways, and Professor of the Conservatoire National des Arts et des Métiers; Blondel, Chief of Traction Service, Société Alsthom; Dr. Pierre Goudal; Messrs Heidmann, Technical Director, Forges et Ateliers de Constructions Electriques de Jeumont; Jeanson, Assistant to Chief Mechanical Engineer, and M. G. Ruhlman, Ingénieur Général des Services Techniques, Régie Autonome des Transports Parisiens; Rossignol, Chief Traction Engineer, Le Matériel Electrique S.W.

Holland: Messrs. J. Kater, Chief Mechanical Engineer, J. P. Koster, Engineer, E. van der Hock, Chief Engineer (Equipment), and H. L. J. Vinke, Superintendent (Motive Power), Netherlands Railways; N. A. Bogtstra, Manager, and S. S. Koldijk, Acting Manager, Rotterdam Tramways; Giesbers, Editor, *Journal of the Koninklijk Instituut van Ingenieurs*; A. G. Vorster, Engineer, Heemaf N.V., Hengelo; J. Wildschut, Engineer, Zaandaam.

Ireland: Mr. H. J. Guthrie, Signal & Electrical Engineer, Coras Iompair Eireann.

Italy: Messrs. Albertazzi and Arbela, Italian State Railways; Professor Marco Semenza, Past President of the Associazione Elettrotecnica Italiana.

Norway: Mr. E. L. Norgren, Chief Electrical Engineer, Norwegian State Railways.

Poland: Messrs. Kostrzewa, Head, and M. J. Szenker-Anuszewski and A. Tyszkowski.

Visit to Acton Works, London Transport, of overseas delegates to the Electric Traction Convention held in London last week; on extreme left is Mr. W. S. Graff-Baker, Chief Mechanical Engineer (Railways), London Transport

Electrical Department, Polish Purchasing Mission.

Sweden: Messrs. T. Thelander, Chief Electrical Engineer (and Chairman of Svenska Teknologfereningen) and A. Karsberg, Assistant Chief Electrical Engineer, Swedish State Railways.

Switzerland: Messrs. H. Hilfiker; A. H. Hug; Harry Werz, Electrical Engineer, S. A. des Ateliers de Sécheron, Geneva

Electric Traction Delegates at Waterloo

At the invitation of Mr. C. M. Cock, Chief Electrical Engineer, Railway Executive, visitors to the Electric Traction Convention, held in London last week, inspected electric rolling stock and locomotives at Waterloo Station, Southern Region, on March 22, and afterwards were entertained at a luncheon. Mr. S. B. Warder, Mechanical & Electrical Engineer, Southern Region British Railways, presided, and among those who attended were:

Railway Executive, British Railways: Messrs. R. A. Riddles, Member, Mechanical & Electrical Engineering; R. C. Bond, Chief Officer, Locomotive Construction & Maintenance; C. M. Cock, Chief Electrical Engineer; E. S. Cox, Executive Officer (design).

Southern Region: S. B. Warder, Mechanical & Electrical Engineer; M. G. Burrows, Assistant Mechanical Engineer; F. T. Muncey, and H. S. Smyth, Mechanical & Electrical Engineer's Department.

London Midland Region: R. Varley, Manager & Engineer, Mersey Section.

The English Electric Co. Ltd.: L. H. Short, Director, P. L. Mardis, Chief Engineer, Traction Department; T. Stockings, Engineer-in-charge of Traction Erection; C. C. H. Wade, Manager, Traction Sales & Contracts Department.

Coras Iompair Eireann: H. J. Guthrie, Signal & Electrical Engineer.

Danish State Railways: H. Fogtmann, Civil Engineer.

Forges et Ateliers de Constructions Electriques de Jeumont: S. Kahn, Technical Engineer.

French National Railways: Garreau, Engineer-in-Chief, Chief of Electric Traction Division; H. Parodi, Consulting Engineer.

Italian State Railways: A. d'Arbela.

Norwegian State Railways: E. L. Norgren, Chief Electrical Engineer.

Rotterdam Tramway: S. S. Koldijk, Acting Manager.

Société Alsthom: Blondet, Chief of Traction Service.

Staff & Labour Matters

N.U.R. Wage Claim

Mr. J. B. Figgins, General Secretary, N.U.R., in addressing a conference on March 25, referred to the rejection by the Railway Executive of the N.U.R. claim for a minimum wage of £5 a week. The union had not realised. Mr. Figgins remarked, that in a system of nationalised transport which the whole trade union movement had advocated for years, they would have to submit to an independent tribunal arguments for increased wages no different from those presented to the former railway companies.

Due to the N.U.R. persistence in face of the refusal of the Railway Executive to concede an all-round increase of 10s. a week, the Minister of Labour had set up a Board of Conciliation. As an organisation the N.U.R. was not happy with the board and considered that a court of inquiry, of which the recommendations were not binding on the union, should have been appointed.

It was outrageous that men giving up their leisure by working on rest days should be penalised by having their extra earnings used against them in an application for a wage increase. It might become necessary to insist that the national agreements with the Railway Executive should be honoured in the letter and that no rest days should be worked.

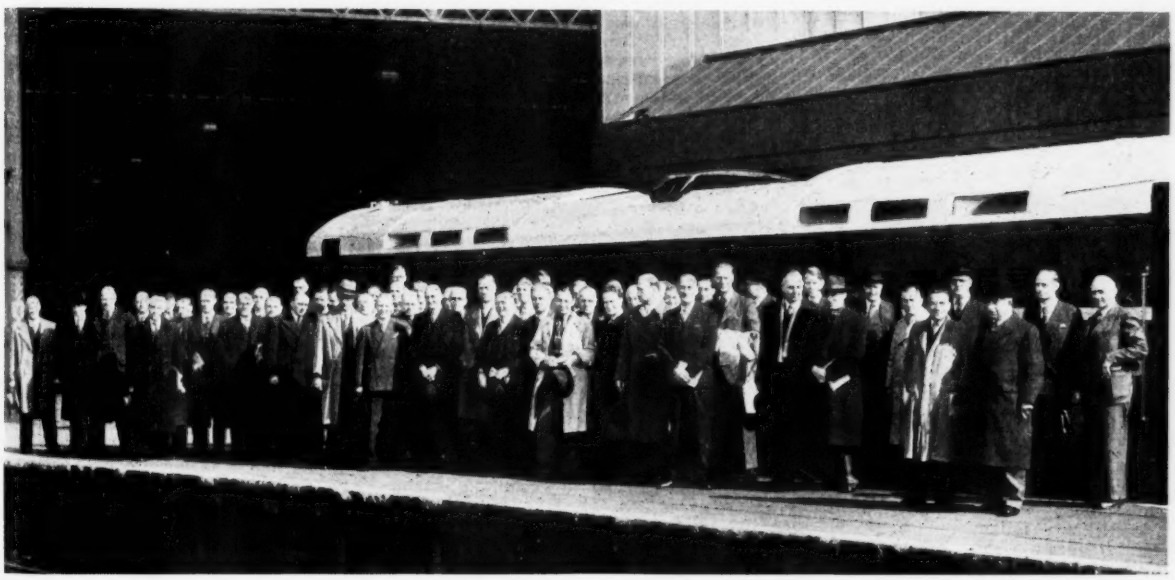
T.U.C. Wage Policy

The T.U.C. special economic committee, after considering again the problem of wages and prices, last week could not reach any definite conclusions. The committee met the Chancellor of the Exchequer on March 27, when the whole position was discussed. Nearly two-thirds of the membership of the T.U.C. has refused to abide by the policy of wage restraint.

CANADIAN PACIFIC RAILWAY RESULTS.—The financial results of the Canadian Pacific Railway Company for the year ended December 31, 1949, show gross earnings of $363,252,094, and working expenses of $342,620,125, giving net earnings of $20,631,969. After adjustment for other income and charges, net income of $29,724,805 resulted. The final dividend of 3 per cent. on the ordinary stock, amounting to $10,050,000, was payable on March 31, 1950.

HADFIELDS LIMITED.—The group net profit for the year ended September 30, 1949, of Hadfields Limited was £332,092 (compared with £185,733 for the preceding nine months); the tax charged was £115,498 (£141,301), and included in the net profit is a balance of profit ascertained on ordnance contracts completed in previous years amounting to £161,206. The ordinary dividend already paid is 5 per cent. (the same as for the previous nine months), with a final dividend proposed of 12½ per cent. (8 per cent.), making a total dividend of 17½ per cent. for the year (13 per cent.) absorbing £103,778 (£77,093).

BRITISH STANDARD WROUGHT EN SERIES.—The British Standards Institution has published B.S.971:1950, Commentary on British Standard Wrought Steels En Series. This standard supersedes B.S. 971:1942, which reproduced that section of the interim report of the Technical Advisory Committee on wrought and special alloy steels which covered the range of steels used in general engineering. The new issue is complementary to B.S.970:1947, and gives guidance on the use of that standard. Copies may be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 10s. 6d., post free.



Visitors to the convention on Electric Railway Traction during the inspection of multiple-unit rolling stock, electric, and diesel-electric locomotives at Waterloo Station on March 22 (see paragraph above)

Notes and News

Senior and Junior Draughtsmen Required.—Senior and junior draughtsmen are required, with experience in the design of diesel-electric locomotives. See Official Notices on page 379.

Crown Agents for the Colonies.—An assistant engineer (civil) not over 35 years of age, is required for the design branch of the London office of the Crown Agents for the Colonies. See Official Notices on page 379.

Tenders for Wheels and Axles for Metre-Gauge Carriages and Wagons.—The High Commissioner for Pakistan invites tenders for the supply of wheels and axles for metre-gauge carriages and wagons. See Official Notices on page 379.

Assistant Accountant Required.—An assistant accountant, between 25 and 35 years of age, is required by the railway department of the Federation of Malaya for one tour of three years with prospect of permanency. See Official Notices on page 379.

Institution of Railway Signal Engineers.—Mr. J. H. Devine will read a paper entitled "Some Comments on the Introduction of F.B. Rails in Britain and its Effect on Signalling" before the Institution of Railway Signal Engineers on April 14. The meeting will be held at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 6 p.m.

Subscription Cards for Holiday Clubs.—British Railways is arranging for subscription cards to be supplied free for party organisers, holiday club secretaries, and other similar organisations, whose members are saving for outings, or holidays. The cards will be suitably ruled so that weekly or other periodical payments towards the cost of such outings, or holidays, can be recorded. Application for the cards should be made to the local railway District Commercial Officer.

Tour of South London Lines.—A special tour of some little-used lines and junctions in the London area of the Southern Region has been organised by the Stephenson Locomotive Society for members and their friends. The tour will take place on April 15 and the party will leave Kensington (Olympia) at 2.15 p.m., proceeding *via* Latchmere Junction, and Loughborough Junction, to Blackfriars, and thence *via* London Bridge, and the Mid-Kent line, to Beckenham Junction. The return journey will be made *via* Norwood Junction, Selhurst, Streatham, and Tulse Hill to Victoria, which will be reached at about 4.25 p.m. The fare for the journey is 5s. 6d., and those interested should communicate with Mr. R. A. Wheeler, 56, St. Johns Avenue, Sutton, Surrey.

Anglo-Scots and North Eastern Region Easter Services.—The train services from Scotland to England will be augmented during the Easter holiday period to the extent of over 45 additional Anglo-Scots expresses. Fifteen trains will leave from Glasgow (Central) for London, Liverpool, and Manchester; Leeds, Sheffield, and the Midlands will be served by thirteen additional trains from Glasgow (St. Enoch) and running *via* Kilmarnock and Dumfries. From Edinburgh (Waverley) 16 special trains are being run to Newcastle, York, and Kings Cross; nine of these East Coast trains will start at Glasgow (Queen Street) and two will originate from Aberdeen. There will be 139 Easter relief trains originating in the North Eastern Region, as well as 94 extra trains running into the Region from the Midlands, Lancashire, Kings Cross, Newcastle and the Eastern Counties. Seat reservation facilities will be provided on 14 relief trains originating in the North Eastern Region.

Carlisle & District Transport Club.—The annual general meeting of the Carlisle & District Transport Club will be held in the County Hotel, Carlisle, at 7.30 p.m. on April 14.

Unionmelt Arc Welding Equipment.—As from April 1, 1950, sales and service for Unionmelt automatic arc welding equipment in the United Kingdom will be handled by the Quasi-Arc Co. Ltd. Enquiries should be addressed to the company at Bilston.

British Wagon Company.—The second interim and final dividend for 1949 of the British Wagon Co. Ltd. amount to 16s. 6d. a share on the £20 shares (£5 paid). This makes a total of 21s. for the year, which is the same as for 1948, and to 5s. 6d. a share on the £20 shares (£1 13s. 4d. paid), making a total of 7s. for the year as before.

Railway Benevolent Institution.—At its meeting on March 22 the board of the Railway Benevolent Institution granted annuities to six widows and three members amounting to £187 per annum, and two funeral gratuities amounting to £16; and authorised 26 grants amounting to £325 10s. from the special benevolent fund in cases of immediate necessity. Grants made from the casualty fund during February amounted to £492 11s.

Swiss Travel Quota.—Monthly quotas of Swiss francs for tourist travel have been allocated for the period May 1 to October 31, 1950, and the Authorisation Office for Travel to Switzerland, 11c, Lower Regent Street, London, S.W.1, will issue authorisations within the limits of these quotas. The amount authorised will be based on the duration of stay in Switzerland and on the scale of hotel charges in each case within the maximum basic allowance of £50 for adults and £35 a year for children under 15 years of age. Payments in general will be made in Switzerland in two instalments. There will be an initial payment not exceeding the equivelent of £15 on arrival in Switzerland and the balance not earlier than four days after the initial payment.

Largest British Diesel Locomotive Order.—The Brush Electrical Engineering Co. Ltd., Loughborough, has received an order from the Ceylon Government Railway through the Crown Agents for 25 main-line diesel-electric locomotives of 1,250 b.h.p. each, which at well over £1,000,000 is the largest single order for diesel-electric locomotives yet placed in this country. Mr. B. D. Rampala, Chief Mechanical Engineer, Ceylon Government Railway, recently came to England to select the type of locomotive required, and the present order is the result of discussions on the final design held between Mr. Rampala and the Crown Agents and the Brush firm. The locomotives will be of the AIA-AIA type with a maximum speed of 55 m.p.h., and they will be fitted for multiple-unit working. Power equipment will consist of a Mirrlees JVS 12 pressure-charged V-type engine direct coupled to a Brush 635-kW. generator and the four traction motors will have a continuous rating of 193 b.h.p. each. The mechanical parts will be built in association with W. G. Bagnall Limited at Stafford. The agents for the Brush Company in Ceylon are Hoare & Co. (Engineers) Ltd.

Agreed Charges.—Applications for the approval of 97 further agreed charges under the provisions of section 37 of the Road & Rail Traffic Act, 1933, have been lodged with the Transport Tribunal. Notices of objection must be lodged on or before April 11 next.

Overseas Trolleybus Orders.—Within a few weeks, the first of 50 trolleybuses equipped with electrical equipment supplied by the British Thomson-Houston Co. Ltd., Rugby, will go into service in Perth, Australia, and will be followed by 30 trolleybuses for Adelaide, and 30 for Brisbane, fitted with BTH traction equipment in all cases. A second repeat order for traction equipment has been received from Finland and brings the number of BTH trolleybus equipments supplied or on order for that country to 35. The chassis and bodies are constructed in Finland.

A British Travel Centre for Paris.—There will be a travel centre in Paris shortly to provide information on tourist attractions in Britain. Premises at 6, Place Vendome, Paris, leased by the Tourist Division of the British Tourist & Holidays Board, are now being equipped as an information centre on the lines of the London centre in Leicester Square. Illustrated literature on every locality in Great Britain will be available and there will be a staff specially trained to answer travel queries. In 1949 more than 91,000 visitors came to Britain from France and even more are expected this year.

Railway Students' Association Visit Severn Tunnel.—On Saturday, March 25, some 70 members of the Railway Students' Association, London School of Economics & Political Science, proceeded by the 9.5 a.m. train from Paddington to Bristol for a visit to the Severn Tunnel. After lunch at Bristol the party travelled to Severn Tunnel Junction, where Mr. Evan Evans, Stationmaster & Yardmaster, conducted members over the westbound hump yard. The yard has four reception sidings and 19 sorting roads, grouped according to wagon destinations. Arrangements for the visit to Sudbrook pumping station, Monmouthshire, were made by Mr. T. C. Stephens, Manager, and the party inspected both the pumping machinery and the associated works below ground, before returning to London *via* Newport. An illustrated article on the Severn Tunnel and on the works connected with its maintenance appeared in our June 25, 1948, issue

Road Haulage Insurance Panel.—Although no final decision has yet been taken as to the long-term policy of the Road Haulage Executive in regard to insurance the Executive is faced with a number of problems arising from the fact that it has inherited the insurance arrangements of 2,000 or more road haulage undertakings acquired. The Executive has, therefore, decided to set up an insurance panel to advise in these matters, and, after consultation with the Corporation of Insurance Brokers and Lloyd's Insurance Brokers Association, has appointed Sir Philip D'Ambrumenil, Chairman, and Messrs. V. P. Gentry, David Willis, M. F. Shepherd, and Alex C. Thomson as members. Mr. C. E. Ovington will act as Secretary. Members are authorised to negotiate terms

OFFICIAL NOTICES

Crown Agents for the Colonies

ASSISTANT ENGINEER (CIVIL) required for the Design Branch of the London Office. Salary scale £475 a year rising to £750 a year. The £475 minimum is linked to entry age of 25 with the addition of £25 for each year above that age, up to £600, and the subtraction of £25 for each year below that age. Extra duty allowance of 8 per cent. of annual salary also payable at present. Engagement will be on unestablished terms with a prospect after satisfactory service of appointment to the established and pensionable staff in due course, vacancies permitting. Candidates, not over 35 years, must be Corporate Members of the Institution of Civil Engineers, or have passed the qualifying examination in this Institution or hold an exempting degree or have obtained the Testamur of the Institution of Municipal Engineers. They must have had experience in the office of a Civil Engineer, the Civil Engineering Department of a railway, a firm of structural engineers, the civil engineering branch of a municipality or a contractor, and should be capable of preparing designs for bridges and buildings in steel and have knowledge of reinforced concrete design. Some experience in the field or on works desirable. Duties will entail designs for steel and reinforced concrete structures and general civil engineering work. The officer may be required to undertake short tours in the Colonies on field or survey work. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N 24958/3A on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

DRAUGHTSMAN, with knowledge of Rolling Stock, required for firm in North Midlands.—Reply to Box 656, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Crown Agents for the Colonies

ASSISTANT ACCOUNTANT required by the Railway Department of the Federation of Malaya for one tour of three years with prospect of permanency. Commencing salary, including expatriation pay, according to qualifications and experience in the scale $510 a month rising to $770 a month, plus cost-of-living allowance for single men $150 a month and for married men up to $310 a month. Malayan dollar = 2s. 4d. Free passages. Liberal leave on full salary. Candidates between 25 and 35 years of age must have had seven years training and practical experience in the Accounts' Department of a Railway and be fully conversant with goods and coaching audit work. Must be familiar with preparation of revenue and expenditure accounts and returns, preparation and use of statistics. Should have knowledge of mechanical accounting systems, control and stock recording of stores costing as applied to mechanical engineering workshops. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/23277/3E on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

THE High Commissioner for Pakistan invites tenders for the supply of Wheels and Axles for Metre-Gauge Carriages and Wagons. Forms of tender, which are returnable by May 2, 1950, may be obtained from the Commercial Secretary, Supply & Stores Department, 39/40, Lowndes Square, London, S.W.1, between the hours of 10 a.m. and 4 p.m. Mondays to Fridays, on payment of a fee of five shillings (not returnable). The reference SD.5896/FM should be quoted on all applications for tender forms.

National Coal Board—East Midlands Division

MARKETING DEPARTMENT

APPLICATIONS are invited for the post of Assistant Divisional Transport Officer in this Division. Applicants should have experience in Transport Organisation, including the handling of bulk traffic by rail. The salary will be within the region of £750-£950 per annum and the starting point will be dependent on qualifications and experience. Applications giving full particulars (in chronological order) of age, educational qualifications and experience (with dates) should be addressed to:—THE SECRETARY, NATIONAL COAL BOARD, East Midlands Division, Sherwood Lodge, Arnold, Nr. Nottingham.

FOR SALE: *Railway Gazettes*, complete unbound volumes. July, 1931-December, 1935, incl.; and January, 1938-December, 1948, incl. All in good clean condition, with supplements as issued.—Apply ADAMS, 32, Cropthorne Road, Shirley, Birmingham.

SENIOR and Junior Draughtsmen required, with experience in the design of diesel/electric locomotives. Men with sound steam and/or electric traction experience will be considered. Experience of bogie design would be an advantage. Reply particulars of training, experience, salary required to Box 677, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

STANDARD MILITARY RAILWAY BRIDGES. By F. S. Bond. A description of the different types of bridges designed for rapid erection in the field by the Allied Forces, and of the various methods employed in such erection. 28 pages, 9 in. by 12 in. fully illustrated. Paper cover, 5s. By post 5s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

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and conditions for submission to the Executive and to submit plans as to insurance arrangements in general.

City of Oxford Motor Services.—The balance for the year ended December 31, 1949, of the City of Oxford Motor Services Limited was £126,955. After deduction of £75,000 placed to general reserve, and the addition of £44,379 brought forward, £96,334 is available. The directors recommend dividends for the year of 6½ per cent., less tax, on the cumulative preference shares, 10 per cent., free of tax, on the ordinary shares, and a bonus of 5 per cent., free of tax, on the ordinary shares, an amount of £59,788 is to be carried forward.

Bruce Peebles & Co. Ltd.—After provision for tax and depreciation of buildings, the net profit of Bruce Peebles & Co. Ltd. for the year ended December 31, 1949, amounts to £112,229. The balance brought forward is £11,082, and after allocation of £95,000 to the fixed assets, contracts, and dividend equalisation reserves, £28,311 is available for distribution. The directors recommend dividends, less tax, of 7½ per cent. on preference stock, and a further dividend of 2½ per cent. contingent on profits for the year, making 10 per cent.; and of 10 per cent. on the ordinary stock; this leaves £15,724 to be carried forward.

Northern General Transport Company.—The net profit for the year ended December 31, 1949, of the Northern General Transport Co. Ltd. is £473,436, as compared with £451,862 in 1948. Deducting £72,895 balance of profits retained by subsidiaries, and adding a £252,210 balance from the preceding year, there remains £652,751, against £643,115, of which £275,000, against £265,907, is to be placed to general reserve. The board recommends that dividends be distributed of 6½ per cent. (of which 3¼ per cent. has been paid) on the cumulative preference, and of 20 per cent. (of which 10 per cent. has been paid) on the ordinary, with a bonus of 5 per cent. on the ordinary shares, less tax, which are the same as last year; these sums total £124,998 and leave £252,753 to be carried forward. The directors state that they are taking steps to protect the interests of the company with regard to the Northern Area passenger road transport scheme, as described in our issue of September 9, 1949.

Leyland Motorcoaches for New Zealand.—The photograph reproduced below shows one of the fleet of Leyland Tiger coaches recently placed in service by the New Zealand Government Railways. These coaches, mounted on a Leyland Tiger diesel chassis with a 19-ft. wheelbase, are fitted with steel bodies built by New Zealand Coach Bodies Limited, Auckland. Some of these buses were used for conveying competitors taking part in the Empire Games at Auckland and six of them are to be used on the Auckland to Papakura and Pukekoke bus service which has a route distance of 33 miles. There has been a liberal use of chromium plating in the construction of these coaches.

Jonas Woodhead & Sons Ltd.—At the annual general meeting, on February 27, of Jonas Woodhead & Sons Ltd., whose results were recorded in our February 17 issue, Mr. Allan G. Kyle, Chairman, said that output of the parent company had again broken records. Total assets amounted to £1,254,895, of which only £466,651 were fixed, current liabilities were £249,695, and total reserves had risen from £531,044 to £545,543. Their direct export trade, consisting mainly of spring suspensions for railway rolling stock, was in places encountering tariff barriers, exchange control difficulties, and foreign competition. To increase their overseas trade, they were developing the export of lighter products. The report and accounts and proposed dividend of 10 per cent. were approved. A subsequent extraordi-

Mr. A. Brown, Manager of the New Zealand Railways Road Services, inspecting a Leyland Tiger motor coach (see paragraph above)

nary general meeting approved a resolution to increase the authorised capital from £450,000 to £600,000 by the creation of 600,000 ordinary 5s. shares.

Institute of Welding Spring Meeting.—The 1950 Spring Meeting of the Institute of Welding is being held in Birmingham and Wolverhampton between April 25 and 28. The meeting will open with a conference of Branch Officers at the Grand Hotel, Colmore Row, Birmingham, from 10.30 a.m. to 12.30 p.m. and from 3 to 5.30 p.m. on April 25; there will be a Civic Reception at the Council House, Birmingham, between 8.30 and 11.30 p.m. the same day. A number of technical papers will be presented during the meeting and arrangements have also been made for various visits to nearby works, among them the General Electric Co. Ltd. Witton works, and the Metropolitan-Cammell Carriage & Wagon Co. Ltd. Saltley works.

Steelworks in Miniature.—A new type of research station that will have much of the equipment of a steelworks in miniature is to be begun by the British Iron & Steel Research Association in Sheffield during the next few months. Pilot steelworks plant for melting, rolling, drawing, forging, and so on, for laying out research results before actual application to production plant, will be installed in buildings to be erected on a 2½-acre site. These new buildings, where 38,000 sq. ft. will cost about £250,000, will form the first stage of a B.I.S.R.A. long-term plan. They will consist of a three-storey block and two single-storey plant buildings and will occupy about half the available space. Work on corrosion, steel founding, refractories, and other problems will also be carried out. Mr. C. N. Kington has been appointed Chief Engineer and Administrative Officer.

Forthcoming Meetings

March 31 (*Fri.*).—Mansion House Association on Transport. Annual general meeting at the Trocadero Restaurant, London, W.1, preceded by a luncheon at 12.30 for 1 p.m.

March 31 (*Fri.*).—Institution of Railway Signal Engineers, at the London Transport Executive Signal School, Earls Court Station, at 6.15 p.m. "Train Description," by Mr. J. E. Mott.

April 1 (*Sat.*).—Stephenson Locomotive Society, 32, Russell Road, Kensington, London, W.14, at 3 p.m. Annual general meeting.

April 5 (*Wed.*).—Scottish Society of students of the Locomotive, at the Conference Room, St. Enoch Station, Glasgow, at 7.30 p.m. Film show.

April 5 (*Wed.*).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas' Street, London Bridge, at 5.45 p.m. Annual general meeting and reading of prize essays.

April 5 (*Wed.*).—Institute of Traffic Administration, at Caxton Hall, Westminster, London, S.W.1, at 7 p.m. Brains Trust on Transport.

April 8 (*Sat.*).—Scottish Society of the Locomotive. Visit to Eastfield motive-power depot, Glasgow, at 3 p.m.

April 10 (*Mon.*).—Institute of Traffic Administration, Birmingham Centre, at the Crown Hotel, Corporation Street, Birmingham, at 7 p.m. "Road Communications between the Midlands and South Wales," by Mr. J. P. Gaudin.

Railway Stock Market

Although the budget may not bring any important tax reduction, increases seem unlikely. In the circumstances, the yields on front-ranking securities of all kinds are not unattractive; on many leading industrial shares they are now generous. The view is gaining ground that unless there is a serious financial and economic crisis, share values over a period are more likely to rise than fall.

Even if, as is reported, the T.U.C. is pressing for fresh taxation of profits, the Chancellor of the Exchequer is not expected to impose new burdens, because taxation of company profits has reached a limit beyond which it would do serious harm to industry. At the present time many companies have to plough back into reserves a large part of their earnings so as to finance bigger stocks and the rising cost of materials; many require more finance, but owing to dividend limitation and the restrictions on share bonuses, it is hard to make share issues on terms attractive to shareholders. Most new issues by industrial companies therefore are not in ordinary but in preference shares, debentures, and other fixed-interest securities.

Due partly to a tendency for business to switch back from overseas to home securities, there has been less activity in foreign rails, movements in which were mostly small and indefinite.

Leopoldina stocks have been uncertain, awaiting the directors' plans for dividing the purchase money among the various classes of stockholders when the take-over agreement is finally approved by Brazil. There is continued confidence that share-out terms will be above current market prices in respect of the various debentures with some uncertainty as to the terms to be proposed for the ordinary and preference stocks. The preference have substantial arrears of dividend outstanding to which they are entitled; but approval of the whole scheme will depend on the degree of approval by holders of the ordinary stocks.

Leopoldina ordinary stock at the time of going to press has strengthened to 9¼, but the preference turned easier at 25¼, while the 4 per cent. and 6½ per cent. debentures were 92½ and 131 respectively. Leopoldina Terminal 5 per cent. debentures were 96 and the £1 ordinary units 2s. 10¼d.

Great Western of Brazil at 136s. 3d. have held the rise after attention was drawn to the fact that the current market price is substantially below the share-out price estimated by the directors.

San Paulo 10s. units have been firmer at 14s., whilst Brazil Rail gold bonds were 43.

United of Havana 1906 debentures changed hands around 25¼. Antofagasta have eased to 8½; the preference stock was 47. Canadian Pacific changed hands actively around 27⅞. Manila "A" debentures were 90 and the 5 per cent. preference units 9s. 4½d.

La Guaira ordinary was around 72½ and the 5 per cent. debentures 85. Bolivar "C" debentures marked 52. Taltal remained under the influence of market views of the break-up value of the shares and were dealt in up to 19s. Nitrate Rails were 73s. 9d., elsewhere, a feature has been continued activity around 73½ in White Pass Yukon 6 per cent. debentures.

Further maintained dividends have helped sentiment in the market for road transport companies' shares, which kept firm generally, with Southdown at 125s., West Riding 64s. and Lancashire Transport 82s. 6d. B.E.T. deferred stock, however, has reacted to £425 at the time of going to press.

Iron and steel shares have been firmer, the good yields resulting in better demand; United Steel were 24s. 6d., Dorman Long 51s. 3d. and Hadfields 26s. Vickers continued to fluctuate pending the dividend announcement.

Locomotive building and engineering shares inclined to improve, with Beyer Peacock at 20s., Vulcans 18s. 1½d, North British 18s. 3d. and Gloucester Wagon 47s. 6d. Birmingham Wagons were 28s. 3d., Wagon Repairs 5s. shares 16s., North Central Wagons 13s. and Charles Roberts 81s. 3d.; at Glasgow, Hurst Nelson were 58s. 9d.

The market expects locomotive builders and engineers to maintain their dividends, and in general they should remain well occupied for some years; but for the present the shares attract little attention, sentiment being dominated by the general inactivity and uncertainty.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1947/48	No. of week	Aggregate traffics to date: Total 1948/49	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Central America	Antofagasta ...	811	19.3.50	57,280	– 19,570	11	659,914	– 84,060
	Costa Rica	281	Feb., 1950	c685,032	– c248,448	35	c6,604,802	– c1,416,433
	Dorada	70	Feb., 1950	39,908	+ 11,844	8	78,005	+ 18,292
	Inter. Ctl. Amer. ...	794	Jan., 1950	$1,286,636	+ $196,834	4	$1,286,636	+ $196,834
	La Guaira	22¾	Feb., 1950	$78,787	– $26,912	8	$157,349	– $58,645
	Nitrate	382	15.3.50	13,098	– 5,078	11	97,818	+ 14,286
	Paraguay Cent. ...	274	17.3.50	₲149,196	+ ₲65,127	37	₲5,281,404	+ ₲1,424,266
	Peru Corp. ...	1,050	Feb., 1950	S/.954,700	+ S/.1,290,676	35	$46,205,358	+ $14,445,660
	,, (Bolivian Section)	66	Jan., 1950	Bs.9,346,000	+ Bs.1,867,691	35	Bs.81,738,164	+ Bs. 13,679,397
	Salvador	100	Dec., 1949	c278,000	+ c11,000	26	c730,000	– c46,000
	Taltal	154	Feb., 1950	12,890	+ 1,295	35	103,045	+ 34,115
Canada	Canadian National†	23,473	Feb., 1950	12,255,000	– 45,000	8	23,935,000	– 801,000
	Canadian Pacific† ...	17,037	Jan., 1950	9,256,000	– 1,075,000	4	9,256,000	– 1,075,000
Various	Barsi Light* ...	167	Feb., 1950	25,470	– 3,272	48	324,240	+ 21,755
	Egyptian Delta ...	607	20.2.50	19,054	+ 830	47	611,448	– 43,078
	Gold Coast... ...	536	Jan., 1950	132,620	– 111,046	44	2,313,799	+ 169,763
	Mid. of W. Australia	277	Jan., 1950	34,405	+ 7,202	31	211,561	+ 8,509
	Nigeria	1,900	Dec., 1949	625,316	+ 53,236	39	4,515,454	+ 254,329
	South Africa ...	13,347	4.3.50	1,463,342	+ 30,913	49	71,138,434	+ 5,621,348
	Victoria	4,744	Nov., 1949	1,877,684	+ 416,841	22	—	—

* Receipts are calculated @ 1s. 6d. to the rupee † Calculated at $3 to £1